PRELIMINARY DRAINAGE REPORT FOR CREEKRIDGE AT FLYING HORSE FILING NO. 2

Prepared for:
Pulpit Rock Investments LLC
2138 Flying Horse Club Drive
Colorado Springs, CO 80921

Prepared by:
Classic Consulting Engineers & Surveyors, LLC
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Date prepared 05//26
STM-MP26-0197
STM-REV26-0502

Job no. 1171.79

PRELIMINARY DRAINAGE REPORT FOR
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Engineer's Statement

This report and plan for the drainage design of **Creekridge at Flying Horse Filing No. 2** was prepared by me (or under my direct supervision) and is correct to the best of my knowledge and belief. Said report has been prepared in accordance with the City of Colorado Springs Drainage Criteria Manual and is in conformity with the master plan of the drainage basin. I understand that the City of Colorado Springs does not and will not assume liability for drainage facilities designed by others. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.

SIGNATURE (Affix Seal): _____

David L. Gibson, Colorado P.E. No. 46477 Date:

Developer's Statement

Pulpit Rock Investments LLC hereby certifies that the drainage facilities for **Creekridge at Flying Horse No. 2** shall be constructed according to the design presented in this report. I understand that the City of Colorado Springs does not and will not assume liability for the drainage facilities designed and/or certified by my engineer and that are submitted to the City of Colorado Springs pursuant to section 7.4.701 of the City Code; and cannot, on behalf of **Pulpit Rock Investments LLC,** guarantee that final drainage design review will absolve **Pulpit Rock Investments LLC** and/or their successors and/or assigns of future liability for improper design. I further understand that approval of the final plat does not imply approval of my engineer's drainage design.

Pulpit Rock Investments LLC
Name of Developer

_____
Authorized Signature Date

Adam Doyle
Printed Name

Land Development Manager
Title

2138 Flying Horse Club Drive Colorado Springs CO 80921
Address:

City of Colorado Springs Statement:

Filed in accordance with Section 7.4.701 of the Code of the City of Colorado Springs, 2023, as amended.

_____ _____
For SWENT Manager Date

Conditions:

PRELIMINARY DRAINAGE REPORT FOR
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PRELIMINARY DRAINAGE REPORT FOR
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INTRODUCTION / SITE DESCRIPTION

This document is the Preliminary Drainage Report for Creekridge at Flying Horse Filing No. 2. The current site is undeveloped. The purpose of this report is to evaluate existing drainage conditions and proposed developed conditions in accordance with the requirements of the Colorado Springs Drainage Criteria Manual. Proposed land use will include single family detached dwellings.

Creekridge at Flying Horse Filing No. 2

TOTAL SITE (PLATTED) AREA: 8.913 AC – Residential lots, tracts and ROW.

TOTAL SITE DISTURBANCE AREA: 7.60 AC

Creekridge at Flying Horse Filing No. 2 is a tract of land located in a portion of the south half of section 16 and the north half of section 21, Township 12 South, Range 66 West of the 6th P.M., in the City of Colorado Springs, El Paso County, Colorado.

This drainage report is in conformance with the City of Colorado Springs Drainage Criteria Manual Volume 1 dated May 2014 (and updated January 2021) and Volume 2 dated May 2014 (and updated December 2020) as included in the reference section of this report. Rainfall depths are taken from NOAA Atlas 14, Volume 8, Version 2 for the 2, 5, and 100 year events. All hydrologic and hydraulic calculations are completed using the current DCM Vol. 1, Chapter 6 figure 6.5 and conform to the criteria, charts, and requirements for City of Colorado Springs using the rational method and excel spreadsheets including MHFD-Inlet and MHFD-BMP spreadsheets. See appendix.

No portions of the site are within a Streamside Overlay Zone.

This site is vacant with native grasses. The on-site soils are of Hydrologic Group "B" (Tomah-Crowfoot complex & Stapleton Sandy Loam) as determined by the "Web Soil Survey National Cooperative Soil Survey", prepared by the Natural Resources Conservation Service (see map in Appendix).

Proposed street classifications used within project:
30' Public ROW Residential roadways
A vicinity map is included in the Appendix of the report.

PREVIOUS STUDIES

This site, or a portion of the site, was previously analyzed in the following reports as further described in the existing Drainage Conditions section below.

1. "Final Drainage Report Downtown Flying Horse Filing No. 1 Preliminary Drainage Report for Downtown Flying Horse Future Filings" by Classic Consulting dated January 2023

2. "Amendment #1 to Final Drainage Report Downtown Flying Horse Filing No. 1, Preliminary Drainage Report for Downtown Flying Horse Future Filings" by Classic Consulting dated August 2025.

3. "Preliminary Drainage Report for Creekridge at Flying Horse No. 1" by Classic Consulting dated May 2026

The Creekridge Filing No. 2 development was previously part of the Downtown Flying Horse proposed development and is portions of the previously shown future filings of Downtown Flying Horse.

EXISTING DRAINAGE CONDITIONS

The site drainage was partially analyzed in the reports listed above. Overall, the site drains to the south towards Skipping Rock Avenue and north towards Somerstone Drive. Currently there is an existing 24" public RCP Storm sewer stub located in Skipping Rock Avenue that was constructed with Creekside at Flying Horse Filing No. 1. There is also an existing 10' Type 2 public inlet in the north curb line of Skipping Rock Avenue. The property was evaluated with a residential land use assumed for the property in all prior approved reports listed above. The site is located within the Elkhorn Drainage Basin.

BASIN	AREA (AC)	Q_5 (cfs)	Q_{100} (cfs)	Land Use Description	Routing	Ownership	Discussion	Cardinal Direction	Emergency Overflow
EX-1	41.53	8.4	61.8	HISTORIC	N/A	N/A	SHEET FLOW TO EXISTING 42" STORM STUB	SOUTH	N/A
EX-2	5.62	1.7	12.5	HISTORIC	N/A	N/A	SHEET FLOW TO BLACK SQUIRREL CREEK	NORTH	N/A
EX-3	3.85	1.2	8.6	HISTORIC	N/A	N/A	SHEET FLOW TO BLACK SQUIRREL CREEK	NORTH	N/A
EX-4	32.48	7.0	51.7	HISTORIC	N/A	N/A	SHEET FLOW TO EXISTING INTERQUEST PARKWAY ROADSIDE	SOUTH EAST	N/A

Refer to Historic Drainage Plan included in the Appendix of the report for a summary of historic runoff for the basins depicted on the historic plan.

There are no Offsite Drainage conditions affecting the site

Existing basin analysis was done with Downtown at Flying Horse Filing No. 1 and Creekridge at Flying Horse Filing Ho. 1 and contains areas outside of proposed Creekridge Filings. Total area will be larger than proposed analysis.

PROPOSED DRAINAGE DISCUSSION

On-site flows are described as follows:

Refer to Proposed Drainage Map for Developed Conditions included in the Appendix of the report.

NOTE: Per the drainage map, all proposed inlets are sump unless otherwise specified. All manholes, inlets, pipes and appurtenances are per City of Colorado Springs standard details and conform to the current Drainage Criteria manual (DCM). All facilities are public within ROW or Easement. All proposed pipes to be RCP. An HGL analysis for all storm pipes will be provided with the Final Drainage Report.

BASIN	AREA (AC)	Q_5 (cfs)	Q_{100} (cfs)	Land Use Description	Routing	Ownership	Discussion	Cardinal Direction	Emergency Overflow
A	1.50	3.4	6.8	RES 1/16	EX. 15' TYPE 2 AT GRADE INLET	PUBLIC	SURFACE ROUTING OVER LANDSCAPE AND PAVED AREA TO INLET	SOUTH	N/A
B	2.70	4.9	10.0	RES 1/16	10' TYPE 2 SUMP INLET	PUBLIC	SURFACE ROUTING OVER LANDSCAPE AND PAVED AREA TO INLET	WEST	OVERTOP CURB TO SKIPPING ROCK AVENUE
C	1.55	2.9	5.8	RES 1/16	EX 10' TYPE 2 SUMP INLET	PUBLIC	SURFACE ROUTING OVER LANDSCAPE AND PAVED AREA TO INLET	SOUTH	OVERTOP HIGH POINT IN ROAD TO NEXT INLET
D	3.00	3.1	8.4	RES 1/16 & UNDEVELOPED	15' TYPE 2 AT GRADE INLET	PUBLIC	SURFACE ROUTING OVER LANDSCAPE AND PAVED AREA TO INLET	EAST	N/A
E	0.37	0.1	1.1	LANDSCAPE	EX ROADSIDE DITCH	PUBLIC	SURFACE ROUTING OVER LANDSCAPE TO DITCH	EAST	N/A
F	0.65	0.2	1.3	UNDEVELOPED	EX ROADSIDE DITCH	PUBLIC	SURFACE ROUTING OVER LANDSCAPE TO DITCH	EAST	N/A
OS-1	0.96	1.8	3.6	RES 1/16	15' TYPE 2 AT GRADE INLET	PUBLIC	SURFACE ROUTING OVER LANDSCAPE AND PAVED AREA TO INLET	EAST	N/A
OS-2	0.87	0.5	2.1	RES 1/16	15' TYPE 2 AT GRADE INLET	PUBLIC	SURFACE ROUTING OVER LANDSCAPE AND PAVED AREA TO INLET	EAST	N/A

<u>Compliance with other drainage studies:</u>

Creekridge at Flying Horse Filing No. 1 was accounted for with the development of Creekridge at Flying Horse Filing No. 1. Developed flows are routed to an existing private Full Spectrum Detention (FSD) as shown in the Final Drainage Report Downtown Flying Horse Filing No. 1. Creekridge at Flying Horse Filing No. 2 is depicted as Basin OS-1, OS-2, OS-3, & OS-13 in the Final Drainage Report for Creekridge at Flying Horse Filing No. 1. With the construction of Creekridge at Flying Horse Filing No 1 a public 24" RCP storm pipe was stubbed north of Skipping Rock Avenue in anticipation of the development of Creekridge Filing No. 2. Per the Creekridge at Flying Horse Filing No. 1 report, this 24" RCP pipe was shown as **Pipe 13** and anticipated flow of **Q_5 = 6.7 cfs, Q_{100} = 13.5 cfs**. This compares to this reports developed flows shown as Pipe 1 **Q_5 = 4.9 cfs, Q_{100} = 11.3 cfs.** Anticipated flows and developed flows are less than anticipated. With the construction of Creekridge at Flying Horse Filing No 1 a public 18" RCP storm pipe was stubbed south of Somerstone Drive at

the intersection of Time Out Lane. in anticipation of the development of Creekridge Filing No. 2. Per the Creekridge at Flying Horse Filing No. 1 report, this 18" RCP pipe was shown as **Pipe 4** and anticipated flow of **Q_5 = 3.6 cfs, Q_{100} = 10.5 cfs**. This compares to this reports developed flows shown as Pipe 1 **Q_5 = 3.6 cfs, Q_{100} = 9.2 cfs.** Anticipated flows and developed flows are less than anticipated.

With the construction of Creekridge at Flying Horse Filing No 1 a public 15" Type 2 at grade inlet has been constructed in Somerstone Drive and shown as Design Point 8 in that report to intercept developed flows. Anticipated flow from Creekridge Filing No. 2 are shown as Basin OS-1 1.50 acres **Q_5 = 3.4 cfs, Q_{100} = 6.8 cfs** in the Filing 1 report. Compared to this report as Basin A 1.50 acres **Q_5 = 3.4 cfs, Q_{100} = 6.8 cfs.**

Developed flows from Basin A will sheet flow into Somerstone Drive and Skipping Rock Avenue. This is consistent with the design of the existing inlet and street sections in Creekridge Filing No. 1. See appendix reference maps and reports section for inlet calculations. Anticipated flows and developed flows are equivalent.

With the construction of Creekridge at Flying Horse Filing No 1 a public 10" Type 2 sump inlet has been constructed in Skipping Stone Avenue and shown as Design Point 6 in that report to intercept developed flows. Anticipated flow from Creekridge Filing No. 2 are shown as Basin OS-3 1.55 acres **Q_5 = 2.9 cfs, Q_{100} = 5.8 cfs** in the Filing 1 report. Compared to this report as Basin C 1.55 acres **Q_5 = 2.9 cfs, Q_{100} = 5.8 cfs.** Developed flows from Basin C will sheet flow into Skipping Rock Avenue and be routed via an existing city standard crosspan to the curb an gutter in Skipping Stone to the existing inlet. This is consistent with the design of the existing inlet and street sections in Creekridge Filing No. 1. See appendix reference maps and reports section for inlet calculations. Anticipated flows and developed flows are equivalent.
All storm pipes, inlets, and manhole systems within Creekridge Filing No. 2 are public. An HGL analysis for all storm pipes will be provided with the Final Drainage Report.

<u>Existing Pond Evaluation</u>

The Preliminary Drainage Report for Creekridge at Flying Horse Filing No. 1 has analyzed the existing PCM located in Tract A Downtown Flying Horse Filing No. 1 and accounted for the area shown in this report as Creekridge at Flying Horse Filing No. 2 and future Creekridge Filings ("OS" Basins). Creekridge at Flying Horse

Filing No. 2 is shown at Basins OS-1, OS-2, OS-3 & OS-13 with an assumed tributary area of 8.74 acres in that report with as assumed land use of medium density zoning (R-Flex Medium) and medium density compact residential lots. Creekridge at Flying Horse adheres to this assumed land use and tributary area. Due to no change in assumed land use and tributary area no modifications are proposed to the design of the existing Permanent Control Measure.

FOUR STEP PROCESS/DETENTION

Total disturbance area is 7.60 acres and the 4-step process and detention criteria will apply. Per the approved Final Drainage Report Downtown Flying Horse Filing No. 1 Preliminary Drainage Report for Downtown Flying Horse Future Filings and the Preliminary Drainage Report for Creekridge at Flying Horse Filing No. 1 detention for Creekridge Filing No. 2 will be provided in an existing private full spectrum extended detention permanent control measure located in Tract A of Downtown Flying Horse Filing No. 1.

There are no exclusions for this development.

The site adheres to this Four Step Process as follows:

1. **VOLUME REDUCTION:**

   All developed runoff from the proposed site will be collected in a proposed public or private on-site storm system. This site is in compliance with the Green Infrastructure Manual and Policy Clarification for WQCV Reduction, see Appendix for calculations and exhibit. A planned infiltration area will be located in the existing private permanent control measure located in Downtown Flying Horse Filing No. 1 Tract A in the wetted area during the water quality event. Reviewing the design reports for this pond and a re-evaluation for updated land use by Classic Consulting, the wetted area during the water quality event minus the area of the concrete trickle channel and is calculated as 42,680 sf. RPA used by Creekridge Filing 2 is 6,750 sf. The water quality volume reduction for Creekridge Filing No. 2 is 10% and Green Infrastructure Criteria of 10% reduction in WQCV will be met. The previously approved Lot 1 Downtown Flying Horse Filing No. 1 will utilize 5,227 sf, Creekridge at Flying Horse Filing No. 1 will utilize 15,900 sf. with a total RPA being utilized by these subdivisions of 27,827 sf. The combined volume reduction for Creekridge at Flying Horse Filing No. 1, Creekridge at Flying Horse Filing No. 2 and Lot 1 Downtown Flying Horse Filing No. 1 is 10% and Green Infrastructure Criteria will be met. The remaining 14,803 sf of wetted

area during the water quality event will be utilized for future Creekridge at Flying Horse and Downtown Flying Horse development

tributary to the private pond in Tract A. If ponds available PIA is used up prior to full build out of its tributary area, any remaining future developments within the ponds tributary area will be required to provide PIA's on site to meet their step 1 obligations. The re-evaluation for this pond lists the total anticipated area tributary area as 60.61 acres with a weighed impervious acreage of 69%. The treated disturbance associated with Creekridge Filing No. 2 tributary to the pond 1 is 7.22 acres of that 60.61 acres assumed to be treated by the pond. Effective imperviousness of Creekridge Filing No. 2 is calculated as 63%. All planned infiltration areas (PIA's) shall be clearly depicted and labeled on the Grading and Erosion Control plans.

2. **WQCV:**

STEP 2 SUMMARY TABLE			
AREA ID	**Associated Disturbance Area (ac)**	**Treatment Method**	**Ownership/Maintenance**
BASIN A, B, C, PORTION OF D	7.22	Extended Detention Basin	Private Metro District
Basin E	0.37	Not Treated (less than 5% and not more than 1 acre)	Private
TOTAL DISTURBANCE	**7.60**		
TOTAL DISTURBANCE WITH EXCLUSIONS	**7.60**	**330,886**	**(SF)**
TOTAL TREATED AREA	**7.22**	TOTAL DISTURBANCE MINUS ANY NOT TREATED AREA	
% TREATED	**95.09%**		

3. **STABILIZE STREAM CHANNELS:**

This site will utilize an existing storm sewer south of the site along with proposed storm systems within the development. These facilities will intercept and direct the on-site development flows directly to the existing pond. The existing drainageways will generally see a reduction in flows based on much of the tributary areas being captured on-site and routed to the pond. All new and re-development projects are required to construct or participate in the funding of channel stabilization

measures. Drainage Basin fees paid, at the time of platting, go towards channel stabilization within the drainage basin.

4. **SOURCE CONTROL** – All new and redevelopment that includes outdoor storage or the potential for the introduction of contaminants to the City's MS4 shall be required to implement site specific and/or source control measure to protect receiving waters. The subject site will be required to implement Source Control CCMs applicable to residential activities as recommended in MHFD Volume 3 Chapter 5 listed as:
    a. Disposal of Household Waste
    b. Illicit Discharge Controls
    c. Good Housekeeping
    d. Use of Pesticides, Herbicides, and Fertilizers
    e. Landscape Maintenance.

    The site development includes a final landscape plan (provided by others) that will provide for final site stabilization of all disturbed areas within the development.

FLOODPLAIN STATEMENT

No portion of the platted site with the development, Creekridge at Flying Horse Filing No. 2, is located within a floodplain as determined by the Flood Insurance Rate Maps (F.I.R.M.) Map Number 08041C 0506G effective date, December 7, 2018 (See Appendix).

DRAINAGE AND BRIDGE FEES

ELKHORN BASIN

Elkhorn Basin: 8.913 acres

The total platted area of Filing No. 2 is 8.913 acres. This subdivision is located within the Elkhorn Basin, see appendix for included basin map, which is a closed basin per the annexation agreements for the area. No fees will be paid.

VARIANCES

No variances are proposed at this time.

SUMMARY

The proposed Creekridge at Flying Horse Filing No. 2 development will continue to direct drainage flows as previously approved in prior reports. The current proposal will not adversely affect any downstream or surrounding developments or drainage patterns. This report is in conformance with the previously approved Final Drainage Report(s) for this area and site. The rational method was used to perform calculations for this project, as included in the Appendix of this report utilizing table 6-6 of the DCM Volume 1. All calculations provided in the Appendix of this report are referenced from DCM and/or MHFD required charts, tables, and graphs. All hydrologic and hydraulic criteria have been met and conform with the requirements of the current City of Colorado Springs DCM.

PREPARED BY:
Classic Consulting Engineers & Surveyors, LLC
David L Gibson, P.E.
Project Manager

REFERENCES

1. City of Colorado Springs Drainage Criteria Manual Volume 1, dated May 2014, revised January 2021.

2. City of Colorado Springs Drainage Criteria Manual Volume 2, dated May 2014, revised December 2020

3. Mile High Flood Control District Urban Storm Drainage Criteria Manual Volume 3 dated December 2010 with March 2024 revisions.

4. "Web Soil Survey National Cooperative Soil Survey", by Natural Resources Conservation Service.

5. "Flood Insurance Rate Maps", dated December 7, 2018.

4. "Final Drainage Report for Reserve at Northcreek and Addendum to the Master Development Drainage Plan for Marketplace at Interquest and Final Drainage Report for Marketplace at Interquest Filing No. 1 and Filing No. 2" by Catamount Engineering dated June, 2017

5. "Master Drainage Plan for Marketplace at Interquest and Final Drainage Report for Marketplace at Interquest Filing No. 1 and Filing No. 2" by Classic Consulting Engineers & Surveyors dated September 2016.

6. "Master Development Drainage Plan Update for Fairlane Technological Park Interquest South (Lot 4, Fairlane Technology Parking Filing No. 2) and Final Drainage Report for Lots 1 & 2 Interquest Filing No. 6" by Classic Consulting Engineers & Surveyors dated April 2007.

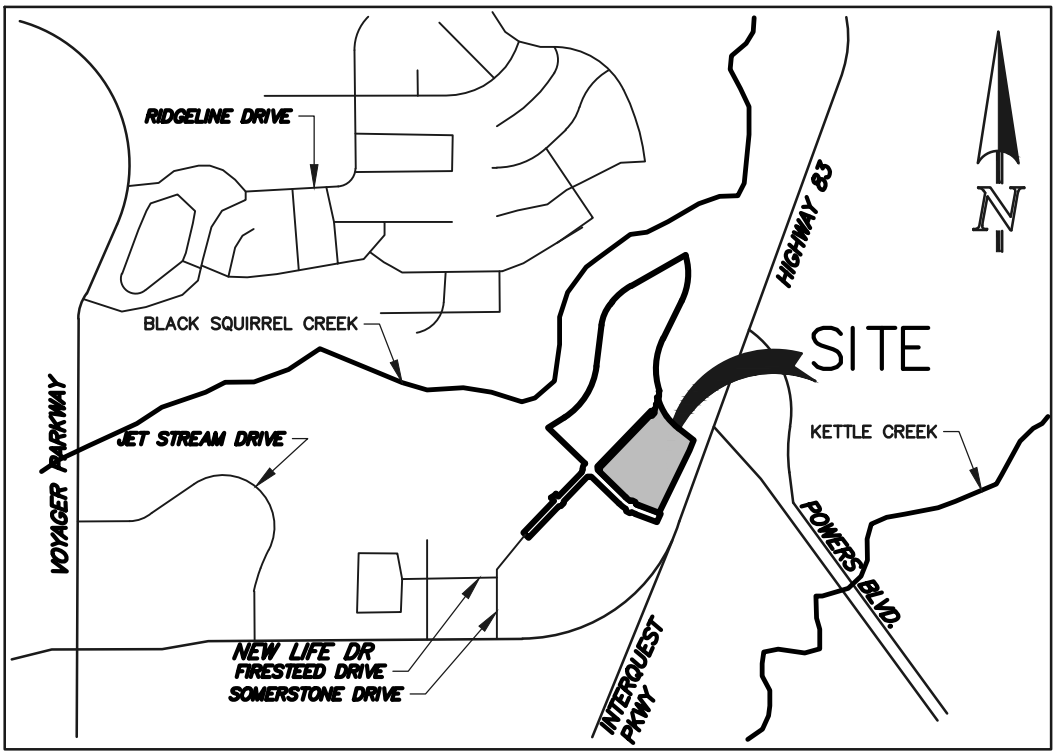
7. "Preliminary/Final Drainage Report for Wildwood at Northgate Filing No. 1 & 2" by JR Engineering dated June 2004

8. "Final Drainage Report Downtown Flying Horse Filing No. 1 Preliminary Drainage Report for Downtown Flying Horse Future Filings" by Classic Consulting dated January 2023

9. "Amendment #1 to Final Drainage Report Downtown Flying Horse Filing No. 1, Preliminary Drainage Report for Downtown Flying Horse Future Filings" by Classic Consulting dated August 2025.

APPENDIX

VICINITY MAP

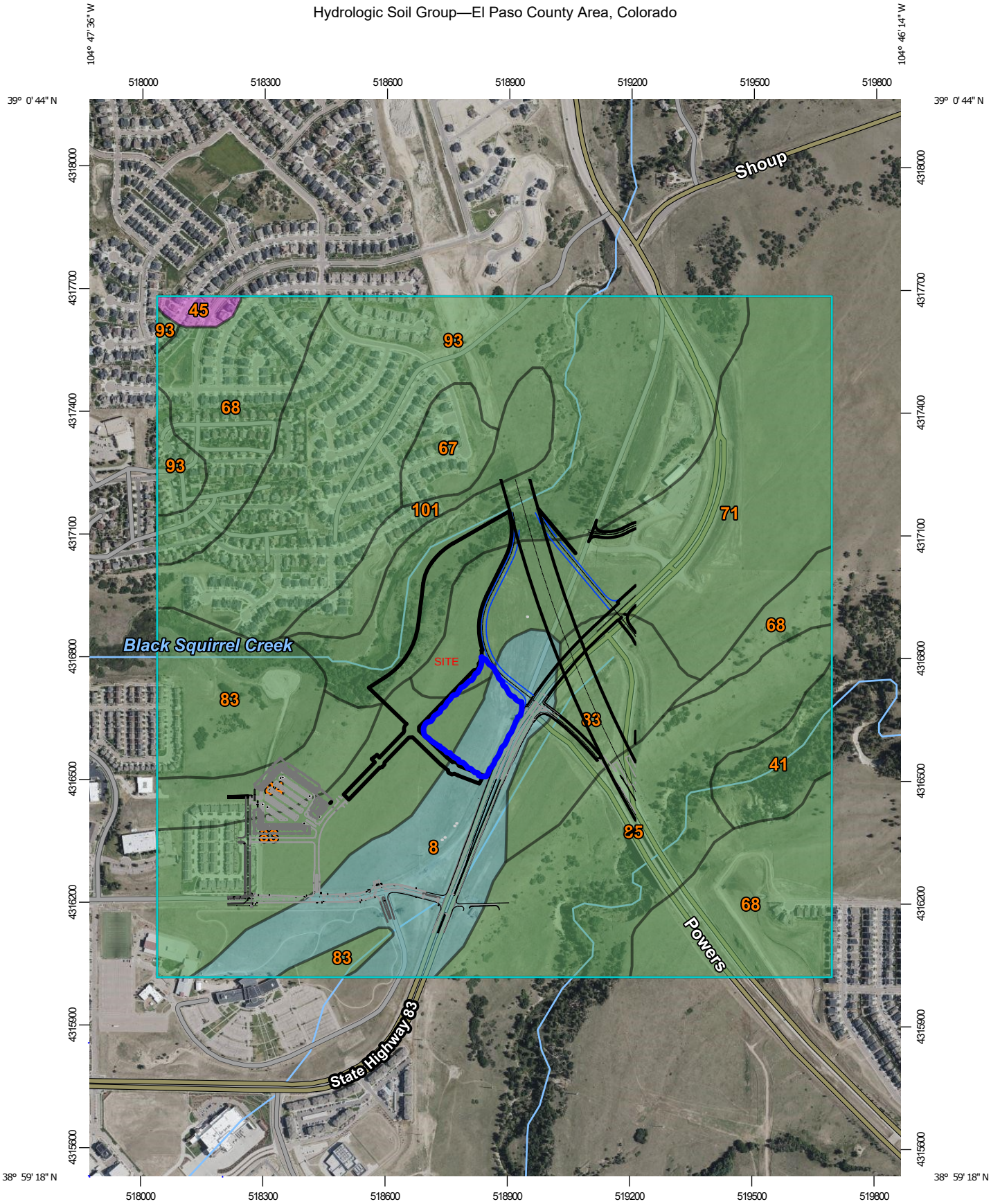


VICINITY MAP

N.T.S.

SOILS MAP (S.C.S SURVEY)

Hydrologic Soil Group—El Paso County Area, Colorado



Map Scale: 1:12,800 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 23, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 23, 2024—Aug 4, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	A	60.0	8.8%
41	Kettle gravelly loamy sand, 8 to 40 percent slopes	B	14.8	2.2%
45	Kutch clay loam, 5 to 20 percent slopes	C	3.2	0.5%
67	Peyton sandy loam, 5 to 9 percent slopes	B	11.4	1.7%
68	Peyton-Pring complex, 3 to 8 percent slopes	B	85.8	12.5%
71	Pring coarse sandy loam, 3 to 8 percent slopes	B	100.9	14.7%
83	Stapleton sandy loam, 3 to 8 percent slopes	B	120.6	17.6%
84	Stapleton sandy loam, 8 to 15 percent slopes	B	17.8	2.6%
85	Stapleton-Bernal sandy loams, 3 to 20 percent slopes	B	72.1	10.5%
93	Tomah-Crowfoot complex, 8 to 15 percent slopes	B	179.4	26.2%
101	Ustic Torrifluvents, loamy	B	18.0	2.6%
Totals for Area of Interest			**684.0**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

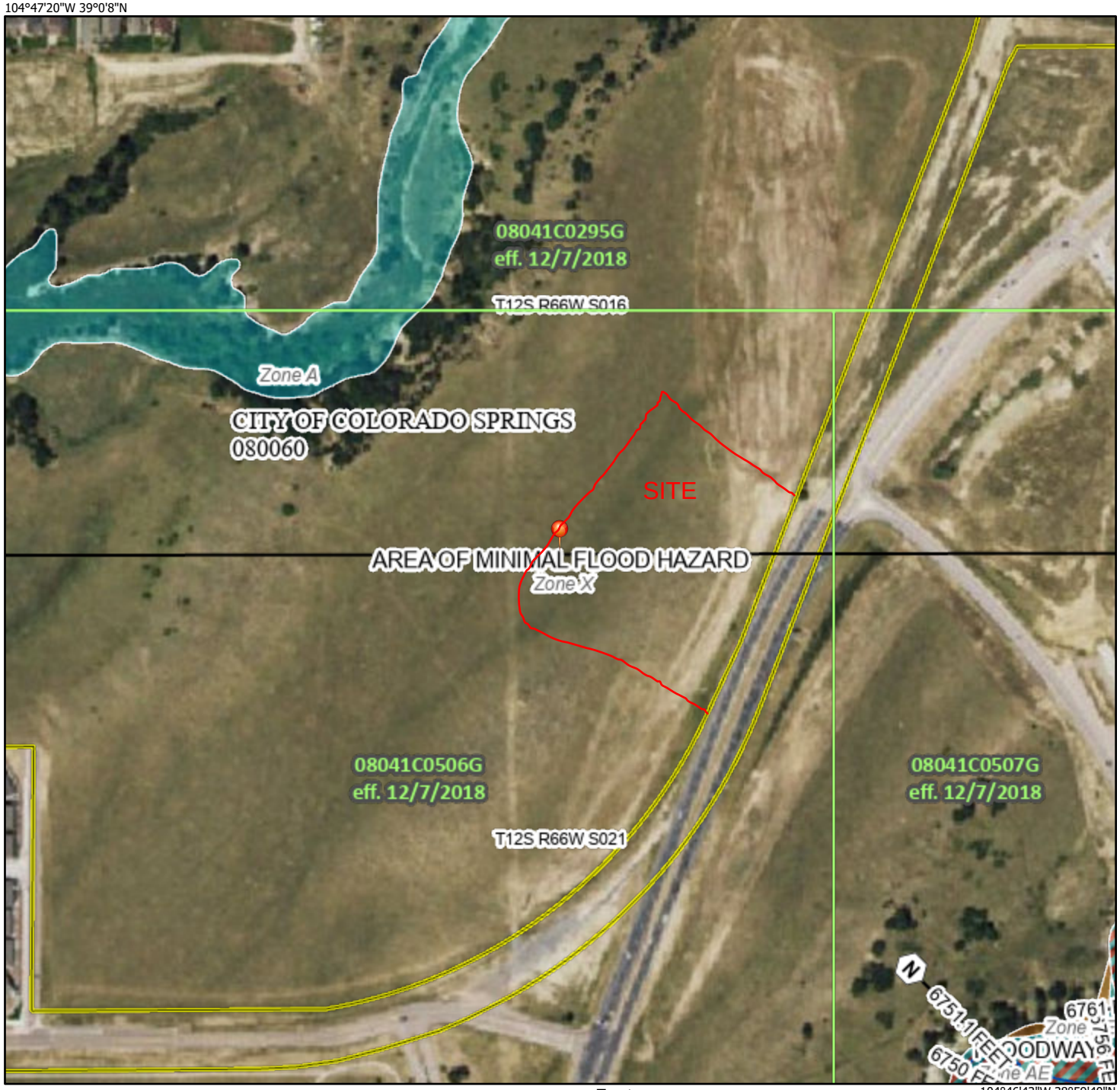
Tie-break Rule: Higher

F.E.M.A. MAP

National Flood Hazard Layer FIRMette

FEMA

104°47'20"W 39°0'8"N



104°46'43"W 38°59'40"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/29/2026 at 4:04 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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DRAINAGE CALCULATIONS

JOB NAME: *CREEKRIDGE AT FLYING HORSE FILING NO. 2*
JOB NUMBER: *1171.78*
DATE: *09/25/26*
CALCULATED BY: *DLG*

BASIN RUNOFF COEFFICIENT SUMMARY

		C VALUE DCM TABLE 6-6						C VALUE DCM TABLE 6-6						WEIGHTED "C" VALUE			WEIGHTED CA			WEIGHTED IMP.
BASIN	TOTAL AREA (AC)	LAND USE	PERCENT IMP.	AREA (AC)	C(2)	C(5)	C(100)	LAND USE	PERCENT IMP.	AREA (AC)	C(2)	C(5)	C(100)	C(2)	C(5)	C(100)	CA(2)	CA(5)	CA(100)	PERCENT
A	1.50	RES 1/16	75.0%	1.50	0.51	0.54	0.65	LANDSCAPE	7.0%	0.00	0.02	0.08	0.35	0.51	0.54	0.65	0.77	0.81	0.98	75.0%
B	2.70	RES 1/16	75.0%	2.70	0.51	0.54	0.65	LANDSCAPE	7.0%	0.00	0.02	0.08	0.35	0.51	0.54	0.65	1.38	1.46	1.76	75.0%
C	1.55	RES 1/16	75.0%	1.55	0.51	0.54	0.65	LANDSCAPE	7.0%	0.00	0.02	0.08	0.35	0.51	0.54	0.65	0.79	0.84	1.01	75.0%
D	3.00	RES 1/16	75.0%	1.45	0.51	0.54	0.65	LANDSCAPE	7.0%	1.55	0.02	0.08	0.35	0.26	0.30	0.50	0.77	0.91	1.49	39.9%
E	0.37	RES 1/16	75.0%	0.00	0.51	0.54	0.65	LANDSCAPE	7.0%	0.37	0.02	0.08	0.35	0.02	0.08	0.35	0.01	0.03	0.13	7.0%
F	0.65	RES 1/16	75.0%	0.00	0.51	0.54	0.65	LANDSCAPE	7.0%	0.65	0.02	0.08	0.35	0.02	0.08	0.35	0.01	0.05	0.23	7.0%
OS-1	0.96	RES 1/16	75.0%	0.96	0.51	0.54	0.65	LANDSCAPE	7.0%	0.00	0.02	0.08	0.35	0.51	0.54	0.65	0.49	0.52	0.62	75.0%
OS-2	0.87	RES 1/16	75.0%	0.20	0.51	0.54	0.65	LANDSCAPE	7.0%	0.67	0.02	0.08	0.35	0.13	0.19	0.42	0.12	0.16	0.36	22.6%
EX-1	41.53	HISTORIC	100.0%	0.00	0.89	0.90	0.96	UNDEVELOPED	2.0%	41.53	0.02	0.08	0.35	0.02	0.08	0.35	0.83	3.32	14.54	2.0%
EX-2	5.62	HISTORIC	100.0%	0.00	0.89	0.90	0.96	UNDEVELOPED	2.0%	5.62	0.02	0.08	0.35	0.02	0.08	0.35	0.11	0.45	1.97	2.0%
EX-3	3.85	HISTORIC	100.0%	0.00	0.89	0.90	0.96	UNDEVELOPED	2.0%	3.85	0.02	0.08	0.35	0.02	0.08	0.35	0.08	0.31	1.35	2.0%
EX-4	32.48	HISTORIC	100.0%	0.00	0.89	0.90	0.96	UNDEVELOPED	2.0%	32.48	0.02	0.08	0.35	0.02	0.08	0.35	0.65	2.60	11.37	2.0%

JOB NAME:	*CREEKRIDGE AT FLYING HORSE FILING NO. 2*
JOB NUMBER:	*1171.78*
DATE:	*09/25/26*
CALC'D BY:	*DLG*

Return Period	1-Hour Depth
2	1.19
5	1.50
10	1.75
25	2.00
50	2.25
100	2.52

$$t_i = \frac{0.395(1.1 - C_5)\sqrt{L}}{S^{0.33}}$$

$$V = C_v S_w^{0.5}$$

Tc=L/V

Table 6-7. Conveyance Coefficient, C_v

Type of Land Surface	C_v
Heavy meadow	2.5
Tillage/field	5
Riprap (not buried)*	6.5
Short pasture and lawns	7
Nearly bare ground	10
Grassed waterway	15
Paved areas and shallow paved swales	20

$$t_c = \frac{L}{180} + 10$$

*For buried riprap, select C_v value based on type of vegetative cover.

BASIN RUNOFF SUMMARY

Intensity calculated using DCM vol 1 Chapter 6 figure 6.5

BASIN	WEIGHTED CA(2)	CA(5)	CA(100)	OVERLAND C(5)	Length (ft)	Height (ft)	Tc (min)	STREET / CHANNEL FLOW Length (ft)	Slope (%)	Velocity (fps)	Tc (min)	Tc TOTAL (min)	INTENSITY I(2) (in/hr)	I(5) (in/hr)	I(100) (in/hr)	TOTAL FLOWS Q(2) (cfs)	Q(5) (cfs)	Q(100) (cfs)
A	0.77	0.81	0.98	0.08	50	2	8.2	300	3.0%	3.5	1.4	9.7	3.33	4.18	7.01	2.5	**3.4**	**6.8**
B	1.38	1.46	1.76	0.08	100	2	14.7	300	2.0%	2.8	1.8	16.4	2.70	3.39	5.68	3.7	**4.9**	**10.0**
C	0.79	0.84	1.01	0.08	100	2	14.7	300	3.0%	3.5	1.4	16.1	2.73	3.42	5.73	2.2	**2.9**	**5.8**
D	0.77	0.91	1.49	0.08	100	2	14.7	300	2.0%	2.8	1.8	16.4	2.70	3.39	5.68	2.1	**3.1**	**8.4**
E	0.01	0.03	0.13	0.08	25	4	3.7	300	2.0%	2.8	1.8	5.5	4.02	5.04	8.46	0.0	**0.1**	**1.1**
F	0.01	0.05	0.23	0.08	100	2	14.7	200	2.0%	2.8	1.2	15.8	2.75	3.44	5.78	0.0	**0.2**	**1.3**
OS-1	0.49	0.52	0.62	0.08	100	2	14.7	300	2.5%	3.2	1.6	16.2	2.72	3.40	5.71	1.3	**1.8**	**3.6**
OS-2	0.12	0.16	0.36	0.08	100	2	14.7	300	2.0%	2.8	1.8	16.4	2.70	3.39	5.68	0.3	**0.5**	**2.1**
EX-1	0.83	3.32	14.54	0.08	300	8	23.1	1000	2.0%	2.8	5.9	29.0	2.03	2.53	4.25	1.7	**8.4**	**61.8**
EX-2	0.11	0.45	1.97	0.08	300	50	12.6	0	0.0%	0.0	0.0	12.6	3.02	3.78	6.35	0.3	**1.7**	**12.5**
EX-3	0.08	0.31	1.35	0.08	300	50	12.6	0	0.0%	0.0	0.0	12.6	3.02	3.78	6.35	0.2	**1.2**	**8.6**
EX-4	0.65	2.60	11.37	0.08	100	1	18.4	1000	1.3%	2.3	7.3	25.7	2.17	2.71	4.55	1.4	**7.0**	**51.7**

JOB NAME: *CREEKRIDGE AT FLYING HORSE FILING NO. 2*
JOB NUMBER: *1171.78*
DATE: *09/25/26*
CALCULATED BY: *DLG*

Intensity calculated using DCM vol 1 Chapter 6 figure 6.5

*ALL STORM SEWER TO BE PRIVATE UNLESS OTHERWISE NOTED

SURFACE ROUTING SUMMARY

Design Point(s)	Contributing Basins / Design Point	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity		Flow		Facility/ Inlet Size*
					I(5)	I(100)	Q(5)	Q(100)	
1	BASIN D & OS-2	1.07	1.85	16.4	3.39	5.68	3.6	10.5	10' TYPE 2 PUBLIC
2	BASIN B & FLOW-BY DP 1	1.46	1.98	16.4	3.39	5.68	4.9	11.3	10' TYPE 2 PUBLIC
EX1	BASIN EX-1	3.32	14.54	29.0	2.53	4.25	8.4	61.8	N/A
EX2	BASIN EX-2	0.45	1.97	12.6	3.78	6.35	1.7	12.5	N/A
EX3	BASIN EX-3	0.31	1.35	12.6	3.78	6.35	1.2	8.6	N/A
EX4	BASIN EX-4	2.60	11.37	25.7	2.71	4.55	7.0	51.7	N/A

MHFD-Inlet, Version 6.00 (August 2025)

INLET MANAGEMENT

Project: CREEKRIDGE AT FLYING HORSE FILING NO. 2
Minor: 5-year
Major: 100-year

Worksheet Protected

INLET NAME	DP-1 INLET	DP-2 INLET
Inlet Application (Street or Area)	STREET	STREET
Hydraulic Condition	On Grade	In Sump
Inlet Type	CDOT Type R Curb Opening	CDOT Type R Curb Opening
Number of Inlet Units	1	1

USER-DEFINED INPUT

User-Defined Peak Flows

Minor Peak Flow, Q (cfs)	3.60	4.90
Major Peak Flow, Q (cfs)	10.50	10.00

Bypass (Carry-Over) Flow from Upstream Inlets must be organized from upstream (left) to downstream (right) in order for bypass

Receive Bypass Flow from:		DP-1 INLET
Bypass Flow Description (Optional):		
Minor Bypass Flow Received, Q_b (cfs)		0.00
Major Bypass Flow Received, Q_b (cfs)		1.29

CALCULATED OUTPUT

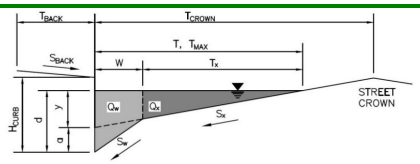
Minor Total Design Peak Flow, Q (cfs)	3.60	4.90
Major Total Design Peak Flow, Q (cfs)	10.50	11.29
Minor Inlet Interception Capacity, Q_a (cfs)	3.60	7.10
Major Inlet Interception Capacity, Q_a (cfs)	9.21	12.66
Minor Flow Bypassed Downstream, Qb (cfs)	0.00	N/A
Major Flow Bypassed Downstream, Qb (cfs)	1.29	N/A
Minor Flow Capture Percentage, C%	100%	100%
Major Flow Capture Percentage, C%	88%	100%

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: CREEKRIDGE AT FLYING HORSE FILING NO. 2

Inlet ID: DP-1 INLET



Gutter Geometry:

Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	7.5	ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020	ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020	
Height of Curb at Gutter Flow Line	H_{CURB} =	6.00	inches
Distance from Curb Face to Street Crown	T_{CROWN} =	11.0	ft
Gutter Width	W =	2.00	ft
Street Transverse Slope	S_X =	0.020	ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.065	ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.020	ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016	

		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	11.0	11.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	6.0	7.8	inches
Allow Flow Depth at Street Crown (check box for yes, leave blank for no)		☐	☑	

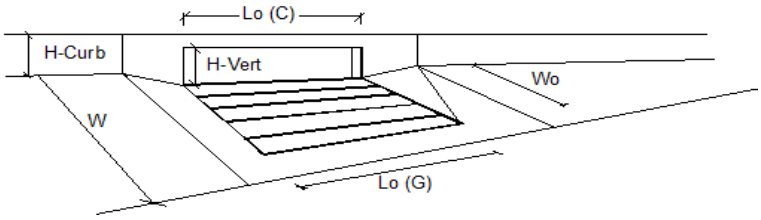
		Minor Storm	Major Storm	
MINOR STORM Allowable Capacity is based on Spread Criterion				
MAJOR STORM Allowable Capacity is based on Depth Criterion	**Q_{allow} =**	**5.1**	**34.6**	**cfs**

Minor storm max. allowable capacity GOOD - greater than the design peak flow of 3.60 cfs on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design peak flow of 10.50 cfs on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

MHFD-Inlet, Version 6.00 (August 2025)



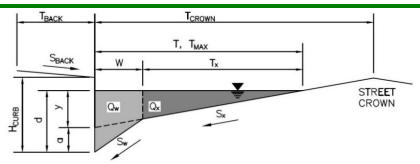
Design Information (Input)		MINOR	MAJOR	
Type of Inlet CDOT Type R Curb Opening	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a')	a_{LOCAL} =	3.0	3.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)	No =	1	1	
Length of a Single Unit Inlet (Grate or Curb Opening)	L_o =	15.00	15.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)	W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	C_f (G) =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	C_f (C) =	0.10	0.10	
Street Hydraulics: OK - Q < Allowable Street Capacity'		MINOR	MAJOR	
Total Inlet Interception Capacity	**Q_a =**	**3.6**	**9.2**	**cfs**
Total Inlet Carry-Over Flow (flow bypassing inlet)	**Q_b =**	**0.0**	**1.3**	**cfs**
Capture Percentage = Q_a/Q_o	**C% =**	**100**	**88**	**%**

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: CREEKRIDGE AT FLYING HORSE FILING NO. 2

Inlet ID: DP-2 INLET



Gutter Geometry:

Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	7.5	ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020	ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020	
Height of Curb at Gutter Flow Line	H_{CURB} =	11.00	inches
Distance from Curb Face to Street Crown	T_{CROWN} =	13.0	ft
Gutter Width	W =	2.00	ft
Street Transverse Slope	S_X =	0.020	ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.065	ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.000	ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016	

		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	11.0	11.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	6.0	7.8	inches
Check boxes are not applicable in SUMP conditions		☐	☐	

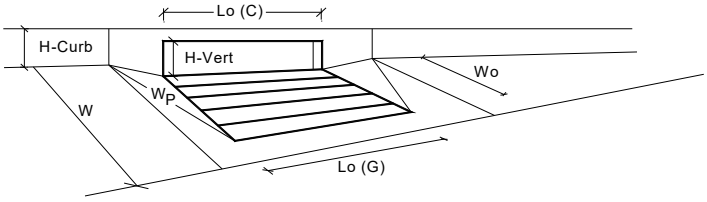
MINOR STORM Allowable Capacity is not applicable to Sump Condition

MAJOR STORM Allowable Capacity is not applicable to Sump Condition

	Minor Storm	Major Storm	
Q_{allow} =	**SUMP**	**SUMP**	**cfs**

INLET IN A SUMP OR SAG LOCATION

MHFD-Inlet, Version 6.00 (August 2025)



Design Information (Input)	CDOT Type R Curb Opening		MINOR	MAJOR	
Type of Inlet		Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)		a_{local} =	0.00	0.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =	1	1	
Water Depth at Flowline (outside of local depression)		Ponding Depth =	6.0	7.8	inches
Grate Information			MINOR	MAJOR	☑ Override Depths
Length of a Unit Grate		L_o (G) =	N/A	N/A	feet
Width of a Unit Grate		W_o =	N/A	N/A	feet
Open Area Ratio for a Grate (typical values 0.15-0.90)		A_{ratio} =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		C_f (G) =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)		C_w (G) =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		C_o (G) =	N/A	N/A	
Curb Opening Information			MINOR	MAJOR	
Length of a Unit Curb Opening		L_o (C) =	10.00	10.00	feet
Height of Vertical Curb Opening in Inches		H_{vert} =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches		H_{throat} =	6.00	6.00	inches
Angle of Throat		Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		W_p =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		C_f (C) =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		C_w (C) =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		C_o (C) =	0.67	0.67	
Low Head Performance Reduction (Calculated)			MINOR	MAJOR	
Depth for Grate Midwidth		d_{Grate} =	N/A	N/A	ft
Depth for Curb Opening Weir Equation		d_{Curb} =	0.37	0.52	ft
Grated Inlet Performance Reduction Factor for Long Inlets		RF_{Grate} =	N/A	N/A	
Curb Opening Performance Reduction Factor for Long Inlets		RF_{Curb} =	0.93	1.00	
Combination Inlet Performance Reduction Factor for Long Inlets		$RF_{Combination}$ =	N/A	N/A	
			MINOR	MAJOR	
Total Inlet Interception Capacity (assumes clogged condition)		**Q_a =**	**7.1**	**12.7**	**cfs**
Inlet Capacity IS GOOD for Minor and Major Storms (>Q Peak)		$Q_{PEAK\ REQUIRED}$ =	4.9	11.3	cfs

JOB NAME: *CREEKRIDGE AT FLYING HORSE FILING NO. 2*
JOB NUMBER: *1171.78*
DATE: *09/25/26*
CALCULATED BY: *DLG*

Intensity calculated using DCM vol 1 Chapter 6 figure 6.5

* PIPES ARE LISTED AT MAXIMUM SIZE REQUIRED TO ACCOMMODATE Q100 FLOWS AT MINIMUM SLOPE.
REFER TO INDIVIDUAL PIPE SHEETS FOR HYDRAULIC INFORMATION.
PIPES ARE TO BE PRIVATE UNLESS OTHERWISE NOTED.
PRIVATE STORM MATERIALS TO BE RCP OR DOUBLE WALL POLYPROPYLENE (DWPP) TO BE SELECTED BY CONTRACTOR

PIPE ROUTING SUMMARY

Pipe Run	Contributing Basins / Design Point/Pipe Run	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity		Flow		Pipe Size*
					I(5)	I(100)	Q(5)	Q(100)	
1	DP 1 INTERCEPTED	1.07	1.63	16.4	3.39	5.68	3.6	9.2	18" PUBLIC RCP
2	DP 1	1.46	1.98	16.4	3.39	5.68	4.9	11.3	24" PUBLIC RCP

PIPE RUN 1 5 YR

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.010 ft/ft
Diameter	18.0 in
Discharge	3.60 cfs

Results	
Normal Depth	7.3 in
Flow Area	0.7 ft²
Wetted Perimeter	2.1 ft
Hydraulic Radius	3.9 in
Top Width	1.47 ft
Critical Depth	8.7 in
Percent Full	40.4 %
Critical Slope	0.005 ft/ft
Velocity	5.39 ft/s
Velocity Head	0.45 ft
Specific Energy	1.06 ft
Froude Number	1.409
Maximum Discharge	11.30 cfs
Discharge Full	10.50 cfs
Slope Full	0.001 ft/ft
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	40.4 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	7.3 in
Critical Depth	8.7 in
Channel Slope	0.010 ft/ft
Critical Slope	0.005 ft/ft

PIPE RUN 1 100 YR

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.010 ft/ft
Diameter	18.0 in
Discharge	9.20 cfs

Results	
Normal Depth	13.1 in
Flow Area	1.4 ft²
Wetted Perimeter	3.1 ft
Hydraulic Radius	5.4 in
Top Width	1.34 ft
Critical Depth	14.1 in
Percent Full	72.5 %
Critical Slope	0.008 ft/ft
Velocity	6.70 ft/s
Velocity Head	0.70 ft
Specific Energy	1.79 ft
Froude Number	1.167
Maximum Discharge	11.30 cfs
Discharge Full	10.50 cfs
Slope Full	0.008 ft/ft
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	72.5 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	13.1 in
Critical Depth	14.1 in
Channel Slope	0.010 ft/ft
Critical Slope	0.008 ft/ft

Copy of PIPE RUN 2 5 YR

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.010 ft/ft
Diameter	24.0 in
Discharge	4.90 cfs

Results	
Normal Depth	7.6 in
Flow Area	0.9 ft²
Wetted Perimeter	2.4 ft
Hydraulic Radius	4.3 in
Top Width	1.86 ft
Critical Depth	9.4 in
Percent Full	31.6 %
Critical Slope	0.005 ft/ft
Velocity	5.75 ft/s
Velocity Head	0.51 ft
Specific Energy	1.15 ft
Froude Number	1.498
Maximum Discharge	24.33 cfs
Discharge Full	22.62 cfs
Slope Full	0.000 ft/ft
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	31.6 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	7.6 in
Critical Depth	9.4 in
Channel Slope	0.010 ft/ft
Critical Slope	0.005 ft/ft

PIPE RUN 2 100 YR

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.010 ft/ft
Diameter	24.0 in
Discharge	11.30 cfs

Results	
Normal Depth	12.0 in
Flow Area	1.6 ft²
Wetted Perimeter	3.1 ft
Hydraulic Radius	6.0 in
Top Width	2.00 ft
Critical Depth	14.5 in
Percent Full	50.0 %
Critical Slope	0.005 ft/ft
Velocity	7.20 ft/s
Velocity Head	0.80 ft
Specific Energy	1.80 ft
Froude Number	1.432
Maximum Discharge	24.33 cfs
Discharge Full	22.62 cfs
Slope Full	0.002 ft/ft
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	12.0 in
Critical Depth	14.5 in
Channel Slope	0.010 ft/ft
Critical Slope	0.005 ft/ft

GREEN INFRASTRUCTURE EXHIBIT

CLASSIC SM
CONSULTING
ENGINEERS & SURVEYORS

Design Procedure Form: Runoff Reduction

UD-BMP (Version 3.07, March 2018)

Designer:	**DLG**
Company:	**CLASSIC CONSULTING**
Date:	**September 24, 2026**
Project:	**CREEKRIDGE AT FLYING HORSE FILING NO. 2**
Location:	**CREEKRIDGE FILING NO. 2, FILING NO. 1, AND DOWTOWN FLYING HORSE FILING NO. 1 COMBO**

SITE INFORMATION (User Input in Blue Cells)

WQCV Rainfall Depth	0.60	inches
Depth of Average Runoff Producing Storm, d_6 =	0.43	inches (for Watersheds Outside of the Denver Region, Figure 3-1 in USDCM Vol. 3)

Area Type	UIA:RPA	UIA:RPA	UIA:RPA	UIA:RPA	UIA:RPA		DCIA	SPA	SPA	DCIA	DCIA	SPA
Area ID	1-1	1-2	1-3	DTFH	FIL 2		DCIA RES FIL 2	SPA RES FIL 2	SPA APT	APT	DCIA RES FIL 1	SPA RES FIL 1
Downstream Design Point ID	POND	POND	POND	POND	POND		POND	POND	POND	POND	POND	POND
Downstream BMP Type	EDB	EDB	EDB	EDB	EDB		EDB	EDB	EDB	EDB	EDB	EDB
DCIA (ft^2)	--	--	--	--	--		152,189	--	--	269,941	155,855	--
UIA (ft^2)	61,400	61,400	61,400	54,014	58,997		--	--	--	--	--	--
RPA (ft^2)	5,300	5,300	5,300	5,227	6,750		--	--	--	--	--	--
SPA (ft^2)	--	--	--	--	--		--	112,731	10,401	--	--	305,504
HSG A (%)	0%	0%	0%	0%	0%		--		0%	--	--	0%
HSG B (%)	100%	100%	100%	100%	100%		--		100%	--	--	100%
HSG C/D (%)	0%	0%	0%	0%	0%		--		0%	--	--	0%
Average Slope of RPA (ft/ft)	0.010	0.010	0.010	0.010	0.010		--	--	--	--	--	--
UIA:RPA Interface Width (ft)	70.00	70.00	70.00	70.00	70.00		--	--	--	--	--	--

CALCULATED RUNOFF RESULTS

Area ID	1-1	1-2	1-3	DTFH	FIL 2		DCIA RES FIL 2	SPA RES FIL 2	SPA APT	APT	DCIA RES FIL 1	SPA RES FIL 1
UIA:RPA Area (ft^2)	66,700	66,700	66,700	59,241	65,747		--	--	--	--	--	--
L / W Ratio	13.61	13.61	13.61	12.09	13.42		--	--	--	--	--	--
UIA / Area	0.9205	0.9205	0.9205	0.9118	0.8973		--	--	--	--	--	--
Runoff (in)	0.33	0.33	0.33	0.32	0.30		0.50	0.00	0.00	0.50	0.50	0.00
Runoff (ft^3)	1854	1854	1854	1594	1619		6341	0	0	11248	6494	0
Runoff Reduction (ft^3)	704	704	704	656	839		0	5637	520	0	0	15275

CALCULATED WQCV RESULTS

Area ID	1-1	1-2	1-3	DTFH	FIL 2		DCIA RES FIL 2	SPA RES FIL 2	SPA APT	APT	DCIA RES FIL 1	SPA RES FIL 1
WQCV (ft^3)	2558	2558	2558	2251	2458		6341	0	0	11248	6494	0
WQCV Reduction (ft^3)	704	704	704	656	839		0	0	0	0	0	0
WQCV Reduction (%)	28%	28%	28%	29%	34%		0%	0%	0%	0%	0%	0%
Untreated WQCV (ft^3)	1854	1854	1854	1594	1619		6341	0	0	11248	6494	0

CALCULATED DESIGN POINT RESULTS (sums results from all columns with the same Downstream Design Point ID)

Downstream Design Point ID	POND											
DCIA (ft^2)	577,985											
UIA (ft^2)	297,211											
RPA (ft^2)	27,877											
SPA (ft^2)	428,636											
Total Area (ft^2)	1,331,709											
Total Impervious Area (ft^2)	875,196											
WQCV (ft^3)	36,467											
WQCV Reduction (ft^3)	3,608											
WQCV Reduction (%)	10%											
Untreated WQCV (ft^3)	32,859											

CALCULATED SITE RESULTS (sums results from all columns in worksheet)

Total Area (ft^2)	1,331,709
Total Impervious Area (ft^2)	875,196
WQCV (ft^3)	36,467
WQCV Reduction (ft^3)	3,608
WQCV Reduction (%)	10%
Untreated WQCV (ft^3)	32,859

Design Procedure Form: Runoff Reduction

UD-BMP (Version 3.07, March 2018)

Designer:	**DLG**
Company:	**CLASSIC CONSULTING**
Date:	**September 25, 2026**
Project:	**CREEKRIDGE AT FLYING HORSE FILING NO. 2**
Location:	**CREEKRIDGE FILING NO. 2 ONLY**

SITE INFORMATION (User Input in Blue Cells)

WQCV Rainfall Depth	0.60	inches
Depth of Average Runoff Producing Storm, d_6 =	0.43	inches (for Watersheds Outside of the Denver Region, Figure 3-1 in USDCM Vol. 3)

Area Type	UIA:RPA										DCIA	SPA
Area ID	1										DCIA RES FIL 2	SPA RES FIL 2
Downstream Design Point ID	POND										POND	POND
Downstream BMP Type	EDB										EDB	EDB
DCIA (ft^2)	--										152,189	--
UIA (ft^2)	58,997										--	--
RPA (ft^2)	6,750										--	--
SPA (ft^2)	--										--	112,731
HSG A (%)	0%										--	
HSG B (%)	100%										--	
HSG C/D (%)	0%										--	
Average Slope of RPA (ft/ft)	0.010										--	--
UIA:RPA Interface Width (ft)	70.00										--	--

CALCULATED RUNOFF RESULTS

Area ID	1										DCIA RES FIL 2	SPA RES FIL 2
UIA:RPA Area (ft^2)	65,747										--	--
L / W Ratio	13.42										--	--
UIA / Area	0.8973										--	--
Runoff (in)	0.30										0.50	0.00
Runoff (ft^3)	1619										6341	0
Runoff Reduction (ft^3)	839										0	5637

CALCULATED WQCV RESULTS

Area ID	1										DCIA RES FIL 2	SPA RES FIL 2
WQCV (ft^3)	2458										6341	0
WQCV Reduction (ft^3)	839										0	0
WQCV Reduction (%)	34%										0%	0%
Untreated WQCV (ft^3)	1619										6341	0

CALCULATED DESIGN POINT RESULTS (sums results from all columns with the same Downstream Design Point ID)

Downstream Design Point ID	POND											
DCIA (ft^2)	152,189											
UIA (ft^2)	58,997											
RPA (ft^2)	6,750											
SPA (ft^2)	112,731											
Total Area (ft^2)	330,667											
Total Impervious Area (ft^2)	211,186											
WQCV (ft^3)	8,799											
WQCV Reduction (ft^3)	839											
WQCV Reduction (%)	10%											
Untreated WQCV (ft^3)	7,960											

CALCULATED SITE RESULTS (sums results from all columns in worksheet)

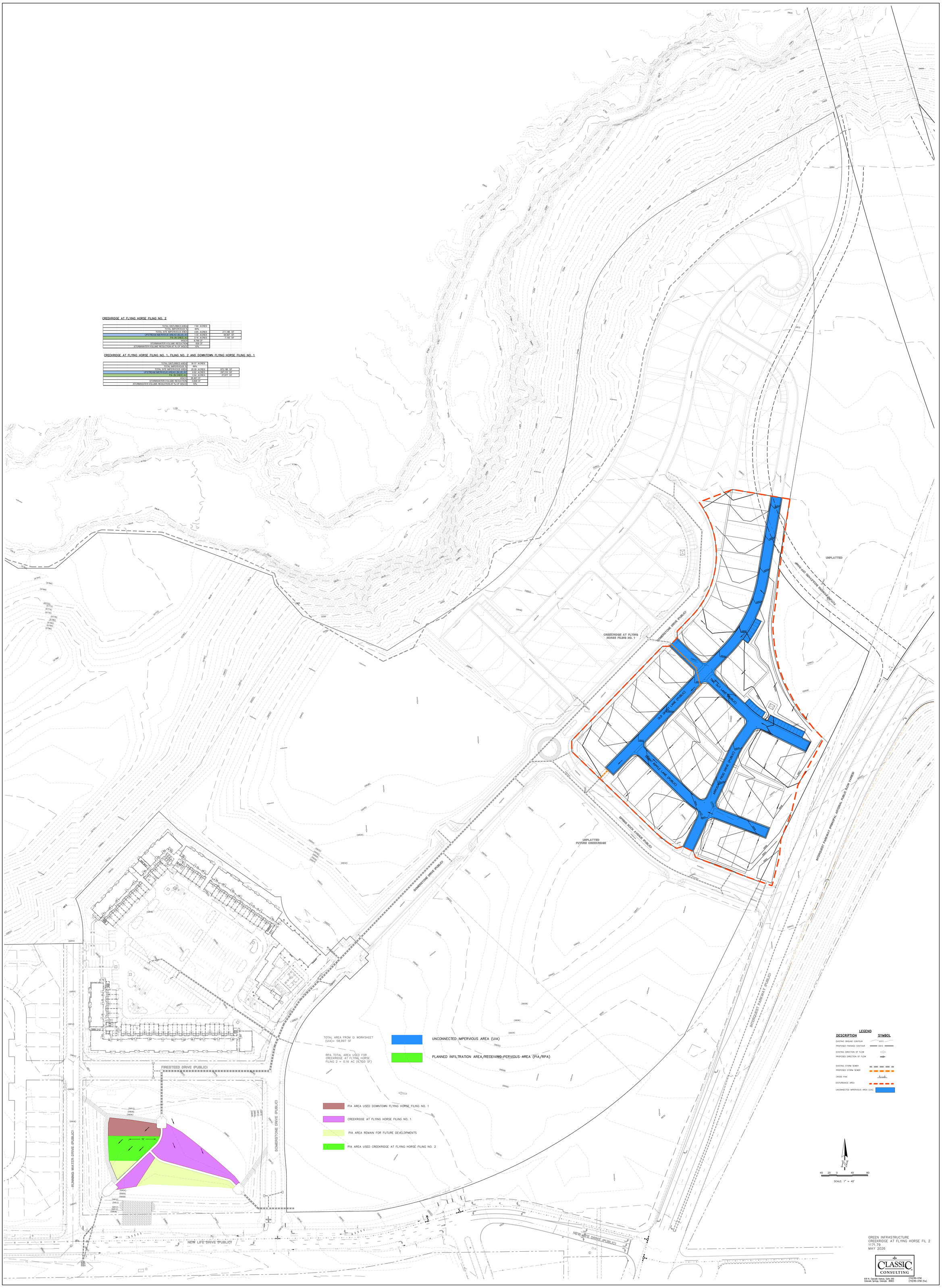
Total Area (ft^2)	330,667
Total Impervious Area (ft^2)	211,186
WQCV (ft^3)	8,799
WQCV Reduction (ft^3)	839
WQCV Reduction (%)	10%
Untreated WQCV (ft^3)	7,960

CREEKRIDGE AT FLYING HORSE FILING NO. 2

TOTAL DISTURBED AREA	7.60 ACRES	
TOTAL IMPERVIOUS %	65%	
TOTAL SITE IMPERVIOUS AREA	4.85 ACRES	211,186 SF
UPSTREAM IMERVIOUS AREAS (BLUE) AC	1.33 ACRES	58,997 SF
PIA (IN GREEN) AC	0.16 ACRES	7,100 SF
WQCV	8,798 CF	
STORMWATER VOLUME REDUCTION	838 CF	
STORMWATER VOLUME REDUCTION AT % OF WQCV	10%	

CREEKRIDGE AT FLYING HORSE FILING NO. 1, FILING NO. 2 AND DOWNTOWN FLYING HORSE FILING NO. 1

TOTAL DISTURBED AREA	30.57 ACRES	
TOTAL IMPERVIOUS %	69%	
TOTAL SITE IMPERVIOUS AREA	20.00 ACRES	875,196 SF
UPSTREAM IMERVIOUS AREAS (BLUE) AC	6.42 ACRES	297,210 SF
PIA (IN GREEN) AC	0.64 ACRES	27,877 SF
WQCV	36,497 CF	
STORMWATER VOLUME REDUCTION	3,608 CF	
STORMWATER VOLUME REDUCTION AT % OF WQCV	10%	



GREEN INFRASTRUCTURE
CREEKRIDGE AT FLYING HORSE FIL 2
1171.79
MAY 2026

CLASSIC CONSULTING
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799 (Fax)

This sheet Included for reference only,

Design Procedure Form: Runoff Reduction

UD-BMP (Version 3.07, March 2018)

Designer:	**DLG**
Company:	**CLASSIC CONSULTING ENGINEERS**
Date:	**September 24, 2026**
Project:	**CREEKRIDGE AT FLYING HORSE FILING NO. 1**
Location:	**CREEKRIDGE FILING NO. 1 AND DOWNTOWN FLYING HORSE FILING NO.1 COMBO**

SITE INFORMATION (User Input in Blue Cells)

WQCV Rainfall Depth: 0.60 inches

Depth of Average Runoff Producing Storm, d_6 = 0.43 inches (for Watersheds Outside of the Denver Region, Figure 3-1 in USDCM Vol. 3)

Area Type	UIA:RPA	UIA:RPA	UIA:RPA	UIA:RPA					SPA	DCIA	DCIA	SPA
Area ID	1-1	1-2	1-3	DTFH					SPA APT	APT	RES	SPA RES
Downstream Design Point ID	POND	POND	POND	POND					POND	POND	POND	POND
Downstream BMP Type	EDB	EDB	EDB	EDB					EDB	EDB	EDB	EDB
DCIA (ft^2)	--	--	--	--					--	298,500	155,855	--
UIA (ft^2)	61,400	61,400	61,400	54,014					--	--	--	--
RPA (ft^2)	5,300	5,300	5,300	5,227					--	--	--	--
SPA (ft^2)	--	--	--	--					10,401	--	--	305,504
HSG A (%)	0%	0%	0%	0%					0%	--	--	0%
HSG B (%)	100%	100%	100%	100%					100%	--	--	100%
HSG C/D (%)	0%	0%	0%	0%					0%	--	--	0%
Average Slope of RPA (ft/ft)	0.010	0.010	0.010	0.100					--	--	--	--
UIA:RPA Interface Width (ft)	70.00	70.00	70.00	70.00					--	--	--	--

CALCULATED RUNOFF RESULTS

Area ID	1-1	1-2	1-3	DTFH					SPA APT	APT	RES	SPA RES
UIA:RPA Area (ft^2)	66,700	66,700	66,700	59,241					--	--	--	--
L / W Ratio	13.61	13.61	13.61	12.09					--	--	--	--
UIA / Area	0.9205	0.9205	0.9205	0.9118					--	--	--	--
Runoff (in)	0.33	0.33	0.33	0.33					0.00	0.50	0.50	0.00
Runoff (ft^3)	1854	1854	1854	1616					0	12438	6494	0
Runoff Reduction (ft^3)	704	704	704	634					520	0	0	15275

CALCULATED WQCV RESULTS

Area ID	1-1	1-2	1-3	DTFH					SPA APT	APT	RES	SPA RES
WQCV (ft^3)	2558	2558	2558	2251					0	12438	6494	0
WQCV Reduction (ft^3)	704	704	704	634					0	0	0	0
WQCV Reduction (%)	28%	28%	28%	28%					0%	0%	0%	0%
Untreated WQCV (ft^3)	1854	1854	1854	1616					0	12438	6494	0

CALCULATED DESIGN POINT RESULTS (sums results from all columns with the same Downstream Design Point ID)

Downstream Design Point ID	POND											
DCIA (ft^2)	454,355											
UIA (ft^2)	238,214											
RPA (ft^2)	21,127											
SPA (ft^2)	315,905											
Total Area (ft^2)	1,029,601											
Total Impervious Area (ft^2)	692,569											
WQCV (ft^3)	28,857											
WQCV Reduction (ft^3)	2,746											
WQCV Reduction (%)	10%											
Untreated WQCV (ft^3)	26,111											

CALCULATED SITE RESULTS (sums results from all columns in worksheet)

Total Area (ft^2)	1,029,601
Total Impervious Area (ft^2)	692,569
WQCV (ft^3)	28,857
WQCV Reduction (ft^3)	2,746
WQCV Reduction (%)	10%
Untreated WQCV (ft^3)	26,111

This sheet Included for reference only,

Design Procedure Form: Runoff Reduction

UD-BMP (Version 3.07, March 2018)

Designer:	**DLG**
Company:	**CLASSIC CONSULTING ENGINEERS**
Date:	**September 23, 2026**
Project:	**CREEKRIDGE AT FLYING HORSE FILING NO. 1**
Location:	**POND PIA FILING 1 ONLY**

SITE INFORMATION (User Input in Blue Cells)

WQCV Rainfall Depth	0.60	inches
Depth of Average Runoff Producing Storm, d_6 =	0.43	inches (for Watersheds Outside of the Denver Region, Figure 3-1 in USDCM Vol. 3)

Area Type	UIA:RPA	UIA:RPA	UIA:RPA								DCIA	SPA
Area ID	1-1	1-2	1-3								RES FIL 1	SPA RES FIL 1
Downstream Design Point ID	POND	POND	POND								POND	POND
Downstream BMP Type	EDB	EDB	EDB								EDB	EDB
DCIA (ft^2)	--	--	--								155,855	--
UIA (ft^2)	61,400	61,400	61,400								--	--
RPA (ft^2)	5,300	5,300	5,300								--	--
SPA (ft^2)	--	--	--								--	305,504
HSG A (%)	0%	0%	0%								--	0%
HSG B (%)	100%	100%	100%								--	100%
HSG C/D (%)	0%	0%	0%								--	0%
Average Slope of RPA (ft/ft)	0.010	0.010	0.010								--	--
UIA:RPA Interface Width (ft)	70.00	70.00	70.00								--	--

CALCULATED RUNOFF RESULTS

Area ID	1-1	1-2	1-3								RES FIL 1	SPA RES FIL 1
UIA:RPA Area (ft^2)	66,700	66,700	66,700								--	--
L / W Ratio	13.61	13.61	13.61								--	--
UIA / Area	0.9205	0.9205	0.9205								--	--
Runoff (in)	0.33	0.33	0.33								0.50	0.00
Runoff (ft^3)	1854	1854	1854								6494	0
Runoff Reduction (ft^3)	704	704	704								0	15275

CALCULATED WQCV RESULTS

Area ID	1-1	1-2	1-3								RES FIL 1	SPA RES FIL 1
WQCV (ft^3)	2558	2558	2558								6494	0
WQCV Reduction (ft^3)	704	704	704								0	0
WQCV Reduction (%)	28%	28%	28%								0%	0%
Untreated WQCV (ft^3)	1854	1854	1854								6494	0

CALCULATED DESIGN POINT RESULTS (sums results from all columns with the same Downstream Design Point ID)

Downstream Design Point ID	POND											
DCIA (ft^2)	155,855											
UIA (ft^2)	184,200											
RPA (ft^2)	15,900											
SPA (ft^2)	305,504											
Total Area (ft^2)	661,459											
Total Impervious Area (ft^2)	340,055											
WQCV (ft^3)	14,169											
WQCV Reduction (ft^3)	2,112											
WQCV Reduction (%)	15%											
Untreated WQCV (ft^3)	12,057											

CALCULATED SITE RESULTS (sums results from all columns in worksheet)

Total Area (ft^2)	661,459
Total Impervious Area (ft^2)	340,055
WQCV (ft^3)	14,169
WQCV Reduction (ft^3)	2,112
WQCV Reduction (%)	15%
Untreated WQCV (ft^3)	12,057

This sheet Included for reference only,

CREEKRIDGE AT FLYING HORSE FILING NO. 1

TOTAL DISTURBED AREA	15.18 ACRES	
TOTAL IMPERVIOUS %	51%	
TOTAL SITE IMPERVIOUS AREA	7.80 ACRES	339,768 SF
UPSTREAM IMERVIOUS AREAS (BLUE) AC	4.23 ACRES	184,200 SF
PIA (IN GREE) AC	0.37 ACRES	15,900 SF
WQCV	14,169 CF	
STORMWATER VOLUME REDUCTION	2,112 CF	
STORMWATER VOLUME REDUCTION AT % OF WQCV	15%	

CREEKRIDGE AT FLYING HORSE FILING NO. 1 AND DOWNTOWN FLYING HORSE FILING NO. 1

TOTAL DISTURBED AREA	23.63 ACRES	
TOTAL IMPERVIOUS %	71%	
TOTAL SITE IMPERVIOUS AREA	15.90 ACRES	692,569 SF
UPSTREAM IMERVIOUS AREAS (BLUE) AC	9.41 ACRES	235,717 SF
PIA (IN GREE) AC	0.48 ACRES	21,127 SF
WQCV	26,857 CF	
STORMWATER VOLUME REDUCTION	2,746 CF	
STORMWATER VOLUME REDUCTION AT % OF WQCV	10%	

UNDEVELOPED LAND = 2.04 ACRE

TOTAL BROKEN INTO EQUAL AREAS FOR GI WORKSHEET (UIA 1 + UIA 2 + UIA 3) = 184,200 SF

RPA TOTAL AREA USED FOR CREEKRIDGE AT FLYING HORSE FILING 1 = 0.36 AC (15,900 SF)

EXCLUSION AREAS (UNDEVELOPED LAND TO REMAIN PERVIOUS)

UNCONNECTED IMPERVIOUS AREA (UIA)

PLANNED INFILTRATION AREA/RECEIVING PERVIOUS AREA (PIA/RPA)

PIA AREA USED DOWNTOWN FLYING HORSE FILING NO. 1

PIA AREA REMAIN FOR FUTURE DEVELOPMENTS

PIA AREA USED CREEKRIDGE AT FLYING HORSE FILING NO. 1

LEGEND

DESCRIPTION	SYMBOL
EXISTING GROUND CONTOUR	6910
PROPOSED FINISHED CONTOUR	6910
EXISTING DIRECTION OF FLOW	
PROPOSED DIRECTION OF FLOW	
EXISTING STORM SEWER	
PROPOSED STORM SEWER	
CROSS PAN	
DISTURBANCE AREA	
UNCONNECTED IMPERVIOUS AREA (UIA)	

N

40 20 0 40 80

SCALE: 1" = 40'

GREEN INFRASTRUCTURE
CREEKRIDGE AT FLYING HORSE FIL 1
1171.78
MAY 2026

CLASSIC CONSULTING
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
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(719)785-0799 (Fax)

This sheet Included for reference only, previously approved

Design Procedure Form: Runoff Reduction

UD-BMP (Version 3.07, March 2018)

Designer:	**DLG**
Company:	**Classic Consulting**
Date:	**August 2, 2022**
Project:	**Downtown Flying Horse Filing No. 1**
Location:	

SITE INFORMATION (User Input in Blue Cells)

WQCV Rainfall Depth	0.53	inches
Depth of Average Runoff Producing Storm, d_6 =	0.43	inches (for Watersheds Outside of the Denver Region, Figure 3-1 in USDCM Vol. 3)

Area Type	UIA:RPA	UIA:RPA										
Area ID	FIL 1											
Downstream Design Point ID	POND											
Downstream BMP Type	EDB											
DCIA (ft^2)	--	--										
UIA (ft^2)	54,014											
RPA (ft^2)	5,401											
SPA (ft^2)	--	--										
HSG A (%)	0%											
HSG B (%)	100%											
HSG C/D (%)	0%											
Average Slope of RPA (ft/ft)	0.020											
UIA:RPA Interface Width (ft)	250.00											

CALCULATED RUNOFF RESULTS

Area ID	FIL 1											
UIA:RPA Area (ft^2)	59,415											
L / W Ratio	0.95											
UIA / Area	0.9091											
Runoff (in)	0.27											
Runoff (ft^3)	1338											
Runoff Reduction (ft^3)	598											

CALCULATED WQCV RESULTS

Area ID	FIL 1											
WQCV (ft^3)	2251											
WQCV Reduction (ft^3)	913											
WQCV Reduction (%)	41%											
Untreated WQCV (ft^3)	1338											

CALCULATED DESIGN POINT RESULTS (sums results from all columns with the same Downstream Design Point ID)

Downstream Design Point ID	POND											
DCIA (ft^2)	0											
UIA (ft^2)	54,014											
RPA (ft^2)	5,401											
SPA (ft^2)	0											
Total Area (ft^2)	59,415											
Total Impervious Area (ft^2)	54,014											
WQCV (ft^3)	2,251											
WQCV Reduction (ft^3)	913											
WQCV Reduction (%)	41%											
Untreated WQCV (ft^3)	1,338											

CALCULATED SITE RESULTS (sums results from all columns in worksheet)

Total Area (ft^2)	59,415
Total Impervious Area (ft^2)	54,014
WQCV (ft^3)	2,251
WQCV Reduction (ft^3)	913
WQCV Reduction (%)	41%
Untreated WQCV (ft^3)	1,338

JOB NAME:	*DOWNTOWN FLYING HORSE FIL. NO. 1*
JOB NUMBER:	*2573.40*
DATE:	*11/11/22*
CALCULATED BY:	*DLG*

* PIPES ARE LISTED AT MAXIMUM SIZE REQUIRED TO ACCOMMODATE Q100 FLOWS AT MINIMUM GRADE.
REFER TO INDIVIDUAL PIPE SHEETS FOR HYDRAULIC INFORMATION.

GREEN INFRASTRUCTURE CALCULATIONS

PCM	Contributing Basins	Impervious Area Total (acre)	20% of Impervious Area (acre)	10% of 20% Impervious Area (acre) = Min. Receiving Pervious Area (RPA) required	Total WQ Event Wetted Area (acre)	Remain WQ Event Wetted Area (acre)
1	A, B, C, D, E, F, J, K, L, M, N, R, S	6.560	1.31	0.13	1.28	1.15

This sheet Included for reference only, previously approved

GREEN INFRASTRUCTURE CALCULATIONS

PCM	Contributing Basins	Impervious Area Total (acre)	20% of Impervious Area (acre)	10% of 20% Impervious Area (acre) = Min. Receiving Pervious Area (RPA) required	Total WQ Event Wetted Area (acre)	Remain WQ Event Wetted Area (acre)
1	A, B, C, D, E, F, G, H, I, J, K, L, M, N, R, S	6.197	1.24	0.12	1.24	1.12

This sheet Included for reference only, previously approved

LOT 1
6.512
AC

FRESTEED DRIVE (57' PUBLIC ROW)

SOMERSTONE DRIVE
(57' PUBLIC ROW)

EXISTING RUNNING
WATER DRIVE (60'
PUBLIC ROW)

FILING 1 TOTAL AREA, = 11.824 ac
TOTAL IMPERVIOUS AREA = 6.197 ac
TOTAL SITE IMPERVIOUS = 52%
UPSTREAM IMPERVIOUS AREA = 1.239 ac
PIA (WQCV WETTED AREA 10% TOTAL) = 0.124 ac
WQCV, cf = 2,251 cf
STORWATER REDUCTION, cf = 913 cf
STORMWATER REDUCTION AS % WQCV = 41%

N

50 25 0 50 100

SCALE: 1" = 50'

CLASSIC CONSULTING
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Colorado Springs, Colorado 80903
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(719)785-0799 (Fax)

DOWNTOWN FLYING HORSE FILING NO. 1
GREEN INFRASTRUCTURE EXHIBIT

DESIGNED BY	DLG	SCALE	DATE
DRAWN BY	DLG	(H) 1"= 50'	SHEET 1 OF 1
CHECKED BY		(V) 1"= N/A	JOB NO. 2573.40

EXISTING CONDITIONS DRAINAGE MAPS:

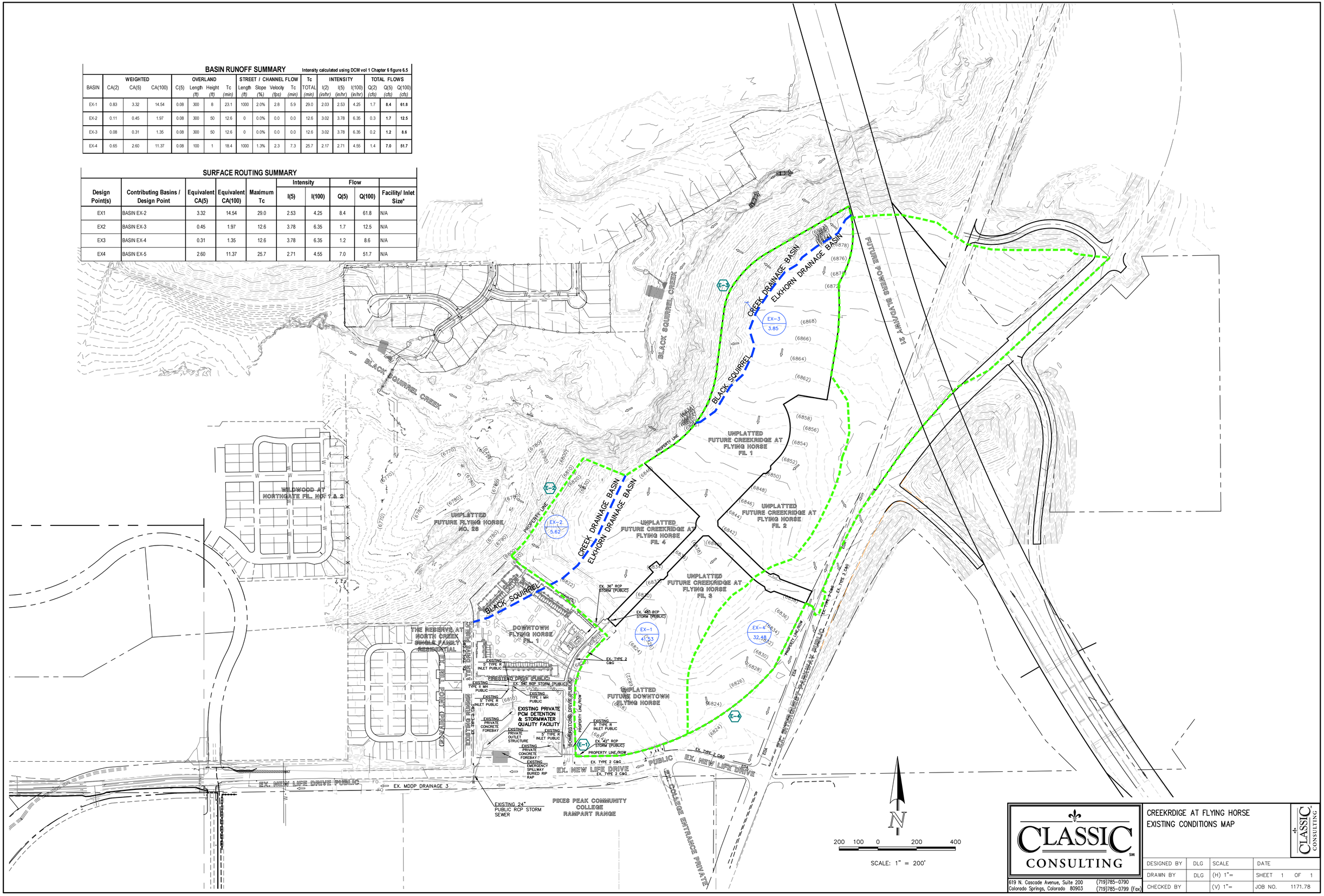
BASIN RUNOFF SUMMARY

Intensity calculated using DCM vol 1 Chapter 6 figure 6.5

BASIN	WEIGHTED CA(2)	WEIGHTED CA(5)	WEIGHTED CA(100)	OVERLAND C(5)	OVERLAND Length (ft)	OVERLAND Height (ft)	OVERLAND Tc (min)	STREET / CHANNEL FLOW Length (ft)	STREET / CHANNEL FLOW Slope (%)	STREET / CHANNEL FLOW Velocity (fps)	STREET / CHANNEL FLOW Tc (min)	Tc TOTAL (min)	INTENSITY I(2) (in/hr)	INTENSITY I(5) (in/hr)	INTENSITY I(100) (in/hr)	TOTAL FLOWS Q(2) (cfs)	TOTAL FLOWS Q(5) (cfs)	TOTAL FLOWS Q(100) (cfs)
EX-1	0.83	3.32	14.54	0.08	300	8	23.1	1000	2.0%	2.8	5.9	29.0	2.03	2.53	4.25	1.7	**8.4**	**61.8**
EX-2	0.11	0.45	1.97	0.08	300	50	12.6	0	0.0%	0.0	0.0	12.6	3.02	3.78	6.35	0.3	**1.7**	**12.5**
EX-3	0.08	0.31	1.35	0.08	300	50	12.6	0	0.0%	0.0	0.0	12.6	3.02	3.78	6.35	0.2	**1.2**	**8.6**
EX-4	0.65	2.60	11.37	0.08	100	1	18.4	1000	1.3%	2.3	7.3	25.7	2.17	2.71	4.55	1.4	**7.0**	**51.7**

SURFACE ROUTING SUMMARY

Design Point(s)	Contributing Basins / Design Point	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity I(5)	Intensity I(100)	Flow Q(5)	Flow Q(100)	Facility/ Inlet Size*
EX1	BASIN EX-2	3.32	14.54	29.0	2.53	4.25	8.4	61.8	N/A
EX2	BASIN EX-3	0.45	1.97	12.6	3.78	6.35	1.7	12.5	N/A
EX3	BASIN EX-4	0.31	1.35	12.6	3.78	6.35	1.2	8.6	N/A
EX4	BASIN EX-5	2.60	11.37	25.7	2.71	4.55	7.0	51.7	N/A



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Colorado Springs, Colorado 80903 (719)785-0799 (Fax)

CREEKRDIGE AT FLYING HORSE
EXISTING CONDITIONS MAP

DESIGNED BY	DLG	SCALE	DATE
DRAWN BY	DLG	(H) 1"=	SHEET 1 OF 1
CHECKED BY		(V) 1"=	JOB NO. 1171.78

N:\1171.78\REPORTS\FINAL DRAINAGE REPORT\PDR 1171.78 EX DM.dwg, 9/23/2026 3:53:20 PM, 1:1

REFERENCE REPORTS & MAPS

This sheet Included for reference only,

BASIN RUNOFF SUMMARY — Intensity calculated using DCM vol 1 Chapter 6 Figure 6.5

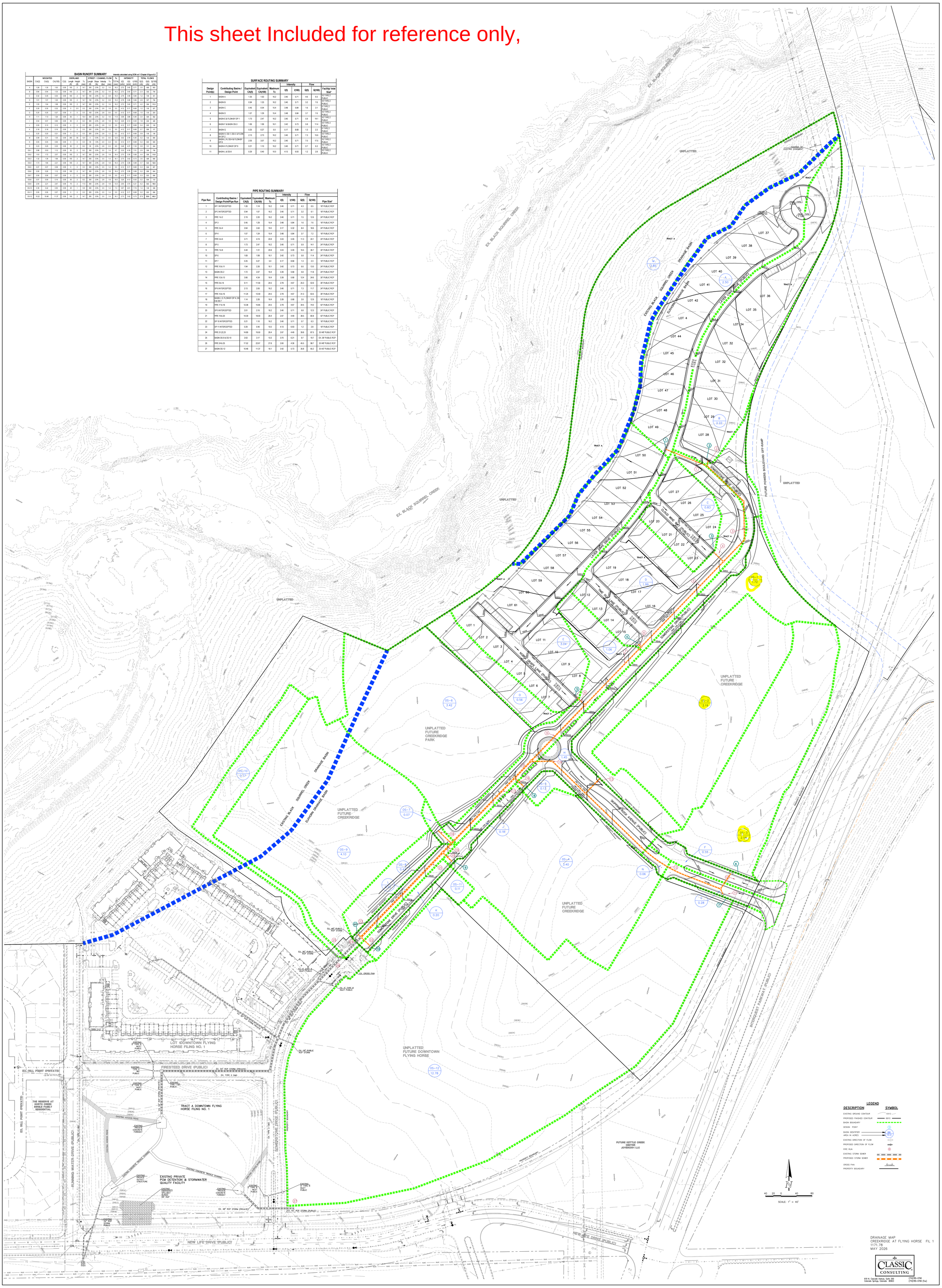
BASIN	WEIGHTED CA(2)	WEIGHTED Tc	WEIGHTED CA(100)	OVERLAND C(5)	OVERLAND Length (ft)	OVERLAND Height (ft)	OVERLAND Tc (min)	STREET / CHANNEL FLOW Length (ft)	Slope (%)	Velocity (fps)	Tc (min)	Tc TOTAL (min)	INTENSITY I(2) (in/hr)	I(5) (in/hr)	I(100) (in/hr)	TOTAL FLOWS Q(2) (cfs)	Q(5) (cfs)	Q(100) (cfs)
A	1.26	1.36	1.63	0.08	100	2	14.7	300	2.0%	3.2	1.6	16.2	2.73	3.40	5.71	3.5	**4.6**	**9.3**
B	0.94	0.94	1.33	0.08	100	2	14.7	300	2.0%	3.2	1.6	16.2	2.73	3.40	5.71	2.3	**3.2**	**7.6**
C	0.42	0.45	0.54	0.08	100	2	14.7	150	2.0%	3.2	0.8	15.4	2.78	3.48	5.84	1.2	**1.6**	**3.1**
D	1.01	1.07	1.26	0.08	100	2	14.7	150	2.0%	3.2	0.8	15.4	2.78	3.48	5.84	2.8	**3.7**	**7.3**
E	1.35	1.44	1.98	0.08	100	2	14.7	300	2.0%	3.2	1.6	16.2	2.73	3.40	5.71	4.2	**5.4**	**11.3**
F	0.26	0.30	0.32	0.08	0	0.5	0.0	300	2.0%	2.8	1.8	5.0	4.12	5.17	8.68	1.2	**1.5**	**2.7**
G	0.25	0.25	0.27	0.08	0	0	0.0	100	2.0%	2.8	0.6	5.0	4.12	5.17	8.68	1.0	**1.3**	**2.3**
H	1.11	1.13	1.26	0.08	50	1	10.4	300	2.0%	3.2	1.6	11.9	3.08	3.86	6.46	3.4	**4.4**	**8.2**
I	0.54	0.57	0.69	0.08	50	2	8.2	300	2.0%	2.8	1.8	10.0	3.29	4.13	6.93	1.9	**2.4**	**4.8**
J	0.09	0.10	0.12	0.08	0	0	0.0	200	2.0%	2.8	1.2	5.0	4.12	5.17	8.68	0.4	**0.5**	**1.0**
K	0.18	0.18	0.19	0.08	0	0	0.0	200	2.0%	2.8	1.2	5.0	4.12	5.17	8.68	0.7	**0.9**	**1.7**
L	0.20	0.20	0.21	0.08	0	0	0.0	200	2.0%	2.8	1.2	5.0	4.12	5.17	8.68	0.8	**1.0**	**1.8**
M	0.38	0.31	1.35	0.08	300	50	12.6	0	0.0%	0.0	0.0	12.6	3.02	3.79	5.35	0.2	**1.2**	**5.8**
N	0.05	0.05	0.06	0.08	0	0	0.0	30	1.0%	2.0	0.4	5.0	4.12	5.17	8.68	0.2	**0.3**	**0.5**
O	0.23	0.25	0.33	0.08	50	2	8.2	50	2.0%	2.8	0.3	8.5	3.48	4.37	7.33	0.8	**1.1**	**2.4**
OS-1	0.66	0.63	1.12	0.08	50	2	8.2	300	3.0%	3.5	1.4	9.7	3.33	4.18	7.01	2.2	**2.6**	**7.8**
OS-2	1.63	1.72	2.07	0.08	100	2	14.7	300	2.0%	2.8	1.8	16.4	2.70	3.39	5.68	4.4	**5.8**	**11.8**
OS-3	1.32	1.39	1.68	0.08	100	2	14.7	300	3.0%	3.5	1.4	16.1	2.73	3.42	5.73	3.6	**4.8**	**9.6**
OS-4	1.73	1.84	2.21	0.08	100	2	14.7	300	2.0%	2.8	1.8	16.4	2.70	3.39	5.68	4.7	**6.2**	**12.6**
OS-5	0.07	0.07	0.08	0.08	0	0	0.0	300	3.0%	3.5	1.4	5.0	4.12	5.17	8.68	0.3	**0.4**	**0.7**
OS-6	0.56	0.26	1.12	0.08	100	2	14.7	300	2.0%	2.8	1.8	16.4	2.70	3.39	5.68	0.2	**0.9**	**6.4**
OS-7	0.06	0.06	0.07	0.08	0	0	0.0	300	2.0%	2.8	1.8	5.0	4.12	5.17	8.68	0.3	**0.3**	**0.6**
OS-8	0.07	0.09	0.10	0.08	50	2	8.2	300	2.0%	2.8	1.8	10.0	3.29	4.13	6.93	0.2	**0.4**	**1.3**
OS-9	2.09	2.21	2.67	0.08	75	2	11.5	300	2.0%	2.8	1.8	13.3	2.95	3.70	6.21	6.2	**8.2**	**16.6**
OS-10	0.39	0.42	0.50	0.08	25	1	5.8	300	3.0%	3.5	1.4	7.3	3.87	4.81	7.74	1.4	**1.9**	**3.9**
OS-11	0.06	0.06	0.07	0.08	0	0	0.0	300	3.0%	3.5	1.4	5.0	4.12	5.17	8.68	0.2	**0.3**	**0.6**
OS-12	10.22	10.48	11.37	0.08	100	2	14.7	300	3.0%	3.5	1.4	16.1	2.73	3.42	5.73	27.9	**35.9**	**65.2**

SURFACE ROUTING SUMMARY

Design Point(s)	Contributing Basins / Design Point	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity I(5)	Intensity I(100)	Flow Q(5)	Flow Q(100)	Facility/ Inlet Size*
1	BASIN A	1.35	1.63	16.2	3.40	5.71	4.6	9.3	10' TYPE 2 PUBLIC
2	BASIN B	0.94	1.33	16.2	3.40	5.71	3.2	7.6	10' TYPE 2 PUBLIC
3	BASIN C	0.45	0.54	15.4	3.48	5.84	1.6	3.1	5' TYPE 2 PUBLIC
4	BASIN D	1.07	1.29	15.4	3.48	5.84	3.7	7.6	10' TYPE 2 PUBLIC
5	BASIN E & FLOW-BY DP 1	1.73	2.47	16.2	3.40	5.71	5.9	14.1	10' TYPE 2 PUBLIC
6	BASIN F & BASIN OS-3	1.69	1.99	16.1	3.42	5.73	5.8	11.4	10' TYPE 2 PUBLIC
7	BASIN G	0.25	0.27	5.0	5.17	8.68	1.3	2.3	5' TYPE 2 PUBLIC
8	BASIN H, OS-1, OS-5 & FLOW-BY DP 2	2.13	2.73	16.2	3.40	5.71	7.3	15.6	10' TYPE 2 PUBLIC
9	BASIN J, K, OS-4 & FLOW-BY DP 4	2.05	3.07	16.2	3.40	5.71	7.0	17.5	10' TYPE 2 PUBLIC
10	BASIN K FLOW-BY DP 9	0.21	1.10	16.2	3.40	5.71	0.7	6.3	10' TYPE 2 PUBLIC
11	BASIN L & OS-8	0.29	0.40	10.0	4.13	6.93	1.2	2.8	10' TYPE 2 PUBLIC

PIPE ROUTING SUMMARY

Pipe Run	Contributing Basins / Design Point/Pipe Run	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity I(5)	Intensity I(100)	Flow Q(5)	Flow Q(100)	Pipe Size*
1	DP 1 INTERCEPTED	1.35	1.14	16.2	3.40	5.71	4.3	6.5	18" PUBLIC RCP
2	DP 2 INTERCEPTED	0.94	1.07	16.2	3.40	5.71	3.2	6.1	18" PUBLIC RCP
3	PIPE 1 & 2	2.19	2.20	16.2	3.40	5.71	7.5	12.6	24" PUBLIC RCP
4	DP 3	0.45	1.29	15.4	3.48	5.84	1.6	7.6	18" PUBLIC RCP
5	PIPE 3 & 4	2.64	3.50	19.0	3.17	5.32	8.4	18.6	24" PUBLIC RCP
6	DP 4	1.07	1.24	15.4	3.48	5.84	3.7	7.2	18" PUBLIC RCP
7	PIPE 5 & 6	3.71	4.74	20.8	3.03	5.09	11.3	24.1	24" PUBLIC RCP
8	DP 5	1.73	2.47	16.2	3.40	5.71	5.9	14.1	24" PUBLIC RCP
9	PIPE 7 & 8	5.44	7.21	20.8	3.03	5.09	16.5	36.7	30" PUBLIC RCP
10	DP 6	1.69	1.99	16.1	3.42	5.73	5.8	11.4	24" PUBLIC RCP
11	DP 7	0.25	0.27	5.0	5.17	8.68	1.3	2.3	18" PUBLIC RCP
12	PIPE 10 & 11	1.94	2.26	16.1	3.42	5.73	6.6	13.0	24" PUBLIC RCP
13	BASIN OS-2	1.72	2.07	16.4	3.39	5.68	5.8	11.8	24" PUBLIC RCP
14	PIPE 12 & 13	3.66	4.34	16.4	3.39	5.68	12.4	24.6	30" PUBLIC RCP
15	PIPE 9 & 14	9.11	11.54	24.5	2.78	4.67	25.3	53.9	36" PUBLIC RCP
16	DP 8 INTERCEPTED	2.13	2.05	16.2	3.40	5.71	7.3	11.7	24" PUBLIC RCP
17	PIPE 15 & 16	11.24	13.59	24.5	2.78	4.67	31.3	63.5	36" PUBLIC RCP
18	BASIN I, O, FLOW-BY DP 4, OS-6 & OS-7	1.14	2.26	16.4	3.39	5.68	3.9	12.9	18" PUBLIC RCP
19	PIPE 17 & 18	12.38	15.85	24.5	2.78	4.67	34.5	74.0	42" PUBLIC RCP
20	DP 9 INTERCEPTED	2.01	2.15	16.2	3.40	5.71	6.8	12.3	24" PUBLIC RCP
21	PIPE 19 & 20	14.39	18.00	26.4	2.67	4.49	38.5	80.8	42" PUBLIC RCP
22	DP 10 INTERCEPTED	0.21	1.10	16.2	3.40	5.71	0.7	6.3	18" PUBLIC RCP
23	DP 11 INTERCEPTED	0.29	0.40	10.0	4.13	6.93	1.2	2.8	18" PUBLIC RCP
24	PIPE 21,22,23	14.89	19.50	26.4	2.67	4.49	39.8	87.5	EX 48" PUBLIC RCP
25	BASIN OS-9 & OS-10	2.63	3.17	13.3	3.70	6.21	9.7	19.7	EX. 30" PUBLIC RCP
26	PIPE 24 & 25	17.52	22.67	27.8	2.60	4.36	45.5	98.7	EX 48" PUBLIC RCP
27	BASIN OS-12	10.48	11.37	16.1	3.42	5.73	35.8	65.2	EX 42" PUBLIC RCP



LEGEND

DESCRIPTION	SYMBOL
EXISTING GROUND CONTOUR	6910
PROPOSED FINISHED CONTOUR	6910
BASIN BOUNDARY	
DESIGN POINT	1
BASIN IDENTIFIER / AREA IN ACRES	100 / 10.0
EXISTING DIRECTION OF FLOW	
PROPOSED DIRECTION OF FLOW	
PIPE RUN	4
EXISTING STORM SEWER	
PROPOSED STORM SEWER	
CROSS PAN	
PROPERTY BOUNDARY	

DRAINAGE MAP
CREEKRIDGE AT FLYING HORSE FIL 1
1171.78
MAY 2026

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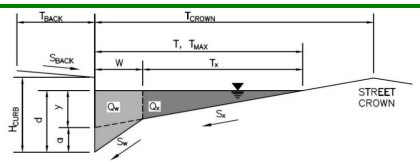
ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: CREEKRIDGE AT FLYING HORSE FILING NO. 1

Inlet ID: DP 6 INLET



Gutter Geometry:

Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	7.5	ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020	ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020	
Height of Curb at Gutter Flow Line	H_{CURB} =	6.00	inches
Distance from Curb Face to Street Crown	T_{CROWN} =	17.0	ft
Gutter Width	W =	2.00	ft
Street Transverse Slope	S_X =	0.020	ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.065	ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.000	ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016	

		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	17.0	17.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	6.0	7.8	inches
Check boxes are not applicable in SUMP conditions		☐	☐	

MINOR STORM Allowable Capacity is not applicable to Sump Condition

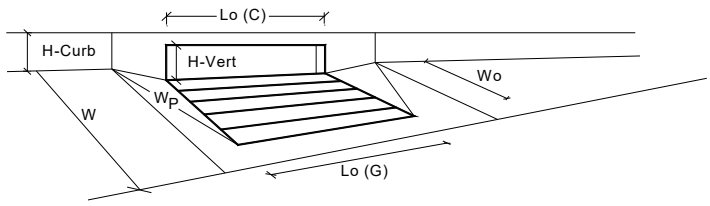
MAJOR STORM Allowable Capacity is not applicable to Sump Condition

	Minor Storm	Major Storm	
Q_{allow} =	**SUMP**	**SUMP**	**cfs**

This sheet Included for reference only,

INLET IN A SUMP OR SAG LOCATION

MHFD-Inlet, Version 6.00 (August 2025)



Design Information (Input)	CDOT Type R Curb Opening		MINOR	MAJOR	
Type of Inlet		Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a' from above)		a_{local} =	3.00	3.00	inches
Number of Unit Inlets (Grate or Curb Opening)		No =	1	1	
Water Depth at Flowline (outside of local depression)		Ponding Depth =	6.0	7.8	inches
Grate Information			MINOR	MAJOR	☑ Override Depths
Length of a Unit Grate		L_o (G) =	N/A	N/A	feet
Width of a Unit Grate		W_o =	N/A	N/A	feet
Open Area Ratio for a Grate (typical values 0.15-0.90)		A_{ratio} =	N/A	N/A	
Clogging Factor for a Single Grate (typical value 0.50 - 0.70)		C_f (G) =	N/A	N/A	
Grate Weir Coefficient (typical value 2.15 - 3.60)		C_w (G) =	N/A	N/A	
Grate Orifice Coefficient (typical value 0.60 - 0.80)		C_o (G) =	N/A	N/A	
Curb Opening Information			MINOR	MAJOR	
Length of a Unit Curb Opening		L_o (C) =	10.00	10.00	feet
Height of Vertical Curb Opening in Inches		H_{vert} =	6.00	6.00	inches
Height of Curb Orifice Throat in Inches		H_{throat} =	6.00	6.00	inches
Angle of Throat		Theta =	63.40	63.40	degrees
Side Width for Depression Pan (typically the gutter width of 2 feet)		W_p =	2.00	2.00	feet
Clogging Factor for a Single Curb Opening (typical value 0.10)		C_f (C) =	0.10	0.10	
Curb Opening Weir Coefficient (typical value 2.3-3.7)		C_w (C) =	3.60	3.60	
Curb Opening Orifice Coefficient (typical value 0.60 - 0.70)		C_o (C) =	0.67	0.67	
Low Head Performance Reduction (Calculated)			MINOR	MAJOR	
Depth for Grate Midwidth		d_{Grate} =	N/A	N/A	ft
Depth for Curb Opening Weir Equation		d_{Curb} =	0.37	0.52	ft
Grated Inlet Performance Reduction Factor for Long Inlets		RF_{Grate} =	N/A	N/A	
Curb Opening Performance Reduction Factor for Long Inlets		RF_{Curb} =	0.93	1.00	
Combination Inlet Performance Reduction Factor for Long Inlets		$RF_{Combination}$ =	N/A	N/A	
			MINOR	MAJOR	
Total Inlet Interception Capacity (assumes clogged condition)		**Q_a =**	**9.7**	**17.2**	**cfs**
Inlet Capacity IS GOOD for Minor and Major Storms (>Q Peak)		$Q_{PEAK\ REQUIRED}$ =	5.5	13.3	cfs

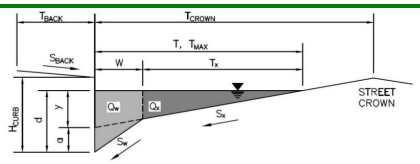
This sheet Included for reference only,

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Project: CREEKRIDGE AT FLYING HORSE FILING NO. 1

Inlet ID: DP 8 AT GRADE



Gutter Geometry:

Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	7.5	ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020	ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020	
Height of Curb at Gutter Flow Line	H_{CURB} =	6.00	inches
Distance from Curb Face to Street Crown	T_{CROWN} =	11.0	ft
Gutter Width	W =	2.00	ft
Street Transverse Slope	S_X =	0.020	ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.065	ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.025	ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.016	

		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	11.0	11.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	6.0	7.8	inches
Allow Flow Depth at Street Crown (check box for yes, leave blank for no)		☐	☑	

		Minor Storm	Major Storm	
MINOR STORM Allowable Capacity is based on Spread Criterion				
MAJOR STORM Allowable Capacity is based on Depth Criterion	**Q_{allow} =**	**5.7**	**32.3**	**cfs**

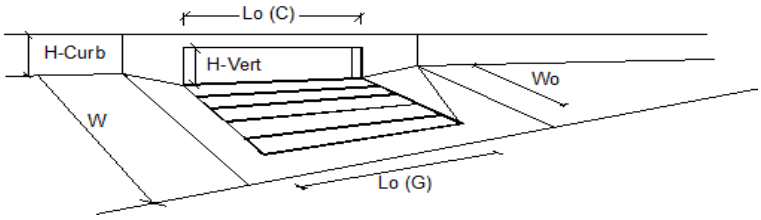
WARNING: MINOR STORM max. allowable capacity is less than the design peak flow of 7.30 cfs on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design peak flow of 15.60 cfs on sheet 'Inlet Management'

This sheet Included for reference only,

INLET ON A CONTINUOUS GRADE

MHFD-Inlet, Version 6.00 (August 2025)



Design Information (Input)		MINOR	MAJOR	
Type of Inlet (CDOT Type R Curb Opening)	Type =	CDOT Type R Curb Opening		
Local Depression (additional to continuous gutter depression 'a')	a_{LOCAL} =	3.0	3.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)	No =	1	1	
Length of a Single Unit Inlet (Grate or Curb Opening)	L_o =	15.00	15.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)	W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	C_f (G) =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	C_f (C) =	0.10	0.10	

Street Hydraulics: WARNING: Q > ALLOWABLE Q FOR MINOR & MAJOR STORM		MINOR	MAJOR	
Total Inlet Interception Capacity	**Q_a =**	**7.1**	**11.7**	**cfs**
Total Inlet Carry-Over Flow (flow bypassing inlet)	**Q_b =**	**0.2**	**3.9**	**cfs**
Capture Percentage = Q_a/Q_o	**C% =**	**97**	**75**	**%**

This sheet Included for reference only,

PIPE RUN 13 100 YR

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

This sheet Included for reference only,

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.010 ft/ft
Diameter	24.0 in
Discharge	11.80 cfs

Results	
Normal Depth	12.3 in
Flow Area	1.6 ft²
Wetted Perimeter	3.2 ft
Hydraulic Radius	6.1 in
Top Width	2.00 ft
Critical Depth	14.8 in
Percent Full	51.3 %
Critical Slope	0.006 ft/ft
Velocity	7.28 ft/s
Velocity Head	0.82 ft
Specific Energy	1.85 ft
Froude Number	1.425
Maximum Discharge	24.33 cfs
Discharge Full	22.62 cfs
Slope Full	0.003 ft/ft
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	51.3 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	12.3 in
Critical Depth	14.8 in
Channel Slope	0.010 ft/ft
Critical Slope	0.006 ft/ft

JOB NAME:	*CREEKRIDGE AT FLYING HORSE FILING NO. 1*
JOB NUMBER:	*1171.78*
DATE:	*09/23/26*
CALCULATED BY:	*DLG*

POND TRIBUTARY AREAS WEIGHTED IMPERVIOUS

TRIBUTARY BASIN	TOTAL AREA (AC)	WEIGHTED IMP. IMP %
A	2.77	**68.4%**
B	1.55	**75.0%**
C	1.02	**55.3%**
D	1.83	**75.0%**
E	2.87	**75.0%**
F	0.33	**100.0%**
G	0.28	**100.0%**
H	0.64	**100.0%**
I	1.23	**65.6%**
J	0.18	**75.0%**
K	0.20	**100.0%**
L	0.22	**100.0%**
N	0.06	**100.0%**
O	0.56	**61.6%**
P	0.96	**75.0%**
Q	0.87	**22.6%**
	15.57	**71.2%**

This sheet Included for reference only,

JOB NAME:	*CREEKRIDGE AT FLYING HORSE FILING NO. 1*
JOB NUMBER:	*1171.78*
DATE:	*09/23/26*
CALCULATED BY:	*DLG*

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L	0.22	**100.0%**
N	0.06	**100.0%**
O	0.56	**61.6%**
P	0.96	**75.0%**
Q	0.87	**22.6%**
OS-1	1.50	**75.0%**
OS-2	2.70	**75.0%**
OS-3	1.55	**75.0%**
OS-4	3.40	**75.0%**
OS-5	0.13	**75.0%**
OS-6	3.21	**7.0%**
OS-7	0.07	**100.0%**
OS-8	0.43	**27.6%**
OS-9	4.10	**75.0%**
OS-11	0.11	**75.0%**
OS-12	12.78	**95.0%**
OS-13	3.00	**39.9%**
DTFH	12.06	**56.9%**
	60.61	**69.0%**

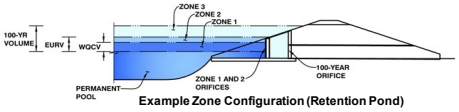
This sheet Included for reference only,

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.06 (July 2022)

Project: **CREEKRIDGE AT FLYING HORSE FILING NO. 1**

Basin ID: **EX POND 1 EVALUATION**



Example Zone Configuration (Retention Pond)

Watershed Information

Selected BMP Type =	**EDB**	
Watershed Area =	60.61	acres
Watershed Length =	3,000	ft
Watershed Length to Centroid =	1,500	ft
Watershed Slope =	0.050	ft/ft
Watershed Imperviousness =	69.00%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	100.0%	percent
Percentage Hydrologic Soil Groups C/D =	0.0%	percent
Target WQCV Drain Time =	40.0	hours
Location for 1-hr Rainfall Depths =	User Input	

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

			Optional User Overrides	
Water Quality Capture Volume (WQCV) =	1.367	acre-feet		acre-feet
Excess Urban Runoff Volume (EURV) =	4.588	acre-feet		acre-feet
2-yr Runoff Volume (P1 = 1.03 in.) =	3.477	acre-feet	1.03	inches
5-yr Runoff Volume (P1 = 1.32 in.) =	4.802	acre-feet	1.32	inches
10-yr Runoff Volume (P1 = 1.59 in.) =	6.105	acre-feet	1.59	inches
25-yr Runoff Volume (P1 = 2.01 in.) =	8.481	acre-feet	2.01	inches
50-yr Runoff Volume (P1 = 2.38 in.) =	10.431	acre-feet	2.38	inches
100-yr Runoff Volume (P1 = 2.77 in.) =	12.640	acre-feet	2.77	inches
500-yr Runoff Volume (P1 = 3.84 in.) =	18.431	acre-feet	3.84	inches
Approximate 2-yr Detention Volume =	3.098	acre-feet		
Approximate 5-yr Detention Volume =	4.202	acre-feet		
Approximate 10-yr Detention Volume =	5.487	acre-feet		
Approximate 25-yr Detention Volume =	6.524	acre-feet		
Approximate 50-yr Detention Volume =	7.145	acre-feet		
Approximate 100-yr Detention Volume =	7.967	acre-feet		

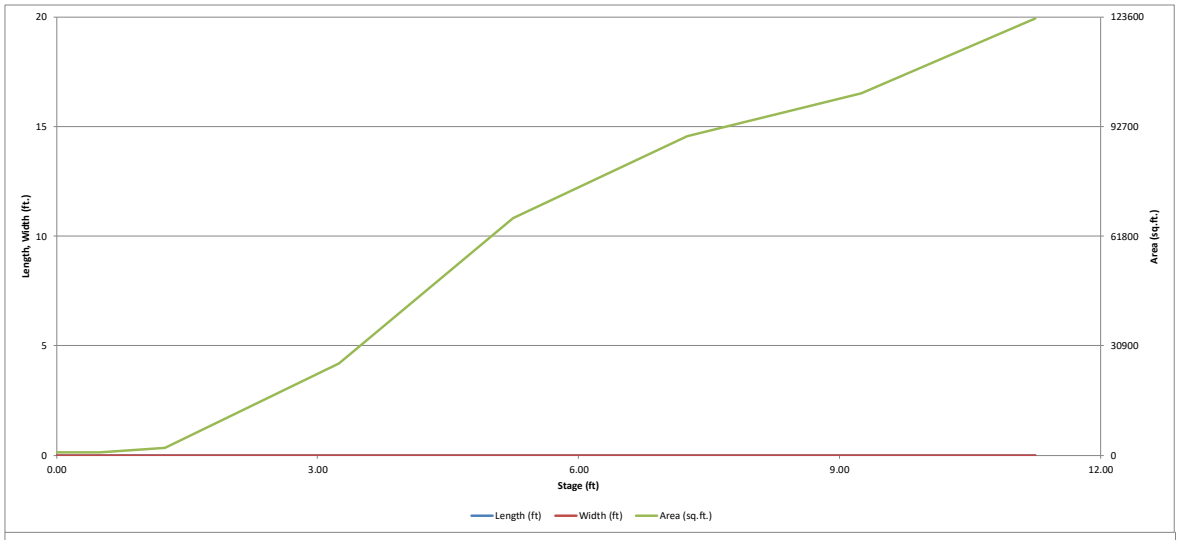
Define Zones and Basin Geometry

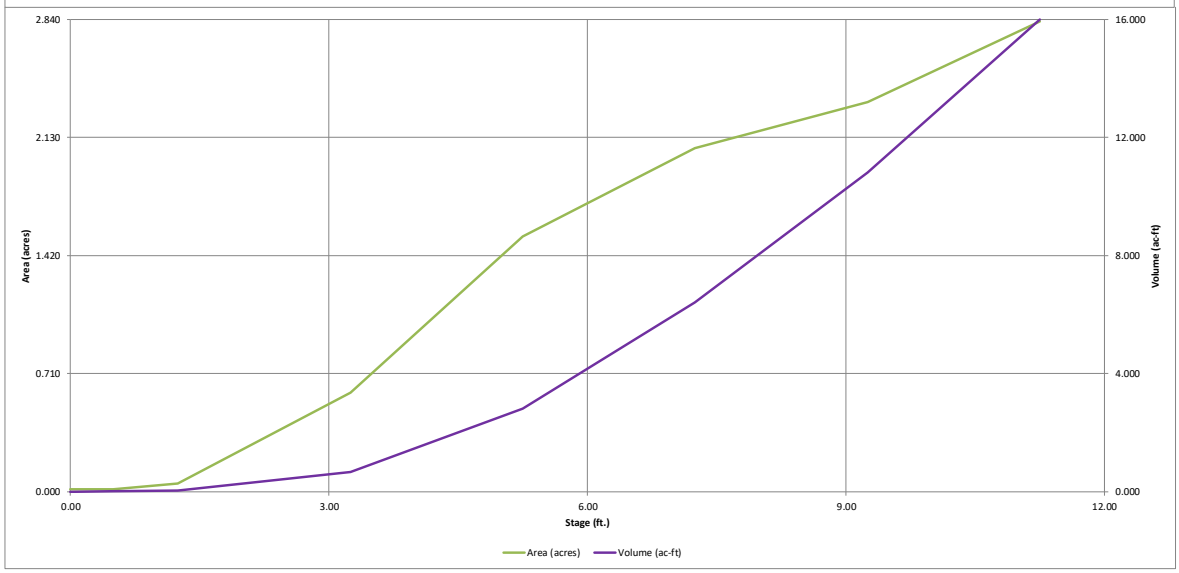
Zone 1 Volume (WQCV) =	1.367	acre-feet
Zone 2 Volume (EURV - Zone 1) =	3.221	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	3.380	acre-feet
Total Detention Basin Volume =	7.967	acre-feet
Initial Surcharge Volume (ISV) =	user	ft^3
Initial Surcharge Depth (ISD) =	user	ft
Total Available Detention Depth (H_{total}) =	user	ft
Depth of Trickle Channel (H_{TC}) =	user	ft
Slope of Trickle Channel (S_{TC}) =	user	ft/ft
Slopes of Main Basin Sides (S_{main}) =	user	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	user	
Initial Surcharge Area (A_{ISV}) =	user	ft^2
Surcharge Volume Length (L_{ISV}) =	user	ft
Surcharge Volume Width (W_{ISV}) =	user	ft
Depth of Basin Floor (H_{FLOOR}) =	user	ft
Length of Basin Floor (L_{FLOOR}) =	user	ft
Width of Basin Floor (W_{FLOOR}) =	user	ft
Area of Basin Floor (A_{FLOOR}) =	user	ft^2
Volume of Basin Floor (V_{FLOOR}) =	user	ft^3
Depth of Main Basin (H_{MAIN}) =	user	ft
Length of Main Basin (L_{MAIN}) =	user	ft
Width of Main Basin (W_{MAIN}) =	user	ft
Area of Main Basin (A_{MAIN}) =	user	ft^2
Volume of Main Basin (V_{MAIN}) =	user	ft^3
Calculated Total Basin Volume (V_{total}) =	**user**	acre-feet

Depth Increment = 2.00 ft

Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft^2)	Optional Override Area (ft^2)	Area (acre)	Volume (ft^3)	Volume (ac-ft)
Top of Micropool	--	0.00	--	--	--	800	0.018		
6801.25	--	0.50	--	--	--	800	0.018	400	0.009
6802	--	1.25	--	--	--	2,100	0.048	1,487	0.034
6804	--	3.25	--	--	--	25,963	0.596	29,550	0.678
6806	--	5.25	--	--	--	66,908	1.536	122,421	2.810
6808	--	7.25	--	--	--	89,961	2.065	279,290	6.412
6810	--	9.25	--	--	--	102,099	2.344	471,350	10.821
6812	--	11.25	--	--	--	123,213	2.829	696,662	15.993

This sheet Included for reference only.





This sheet Included for reference only,

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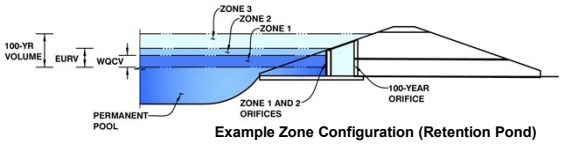
DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.06 (July 2022)

Project: **CREEKRIDGE AT FLYING HORSE FILING NO. 1**

Basin ID: **EX POND 1 EVALUATION**



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	4.12	1.367	Orifice Plate
Zone 2 (EURV)	6.32	3.221	Orifice Plate
Zone 3 (100-year)	7.99	3.380	Weir&Pipe (Restrict)
Total (all zones)		7.967	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth =	N/A	ft (distance below the filtration media surface)	Underdrain Orifice Area =	N/A	ft^2
Underdrain Orifice Diameter =	N/A	inches	Underdrain Orifice Centroid =	N/A	feet

Calculated Parameters for Underdrain

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Centroid of Lowest Orifice =	0.00	ft (relative to basin bottom at Stage = 0 ft)	WQ Orifice Area per Row =	N/A	ft^2
Depth at top of Zone using Orifice Plate =	7.00	ft (relative to basin bottom at Stage = 0 ft)	Elliptical Half-Width =	N/A	feet
Orifice Plate: Orifice Vertical Spacing =	21.00	inches	Elliptical Slot Centroid =	N/A	feet
Orifice Plate: Orifice Area per Row =	N/A	sq. inches	Elliptical Slot Area =	N/A	ft^2

Calculated Parameters for Plate

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	1.80	3.60	5.40				
Orifice Area (sq. inches)	4.00	4.50	14.00	14.00				

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

	Not Selected	Not Selected			Not Selected	Not Selected	
Invert of Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Area =	N/A	N/A	ft^2
Depth at top of Zone using Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)	Vertical Orifice Centroid =	N/A	N/A	feet
Vertical Orifice Diameter =	N/A	N/A	inches				

Calculated Parameters for Vertical Orifice

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir and No Outlet Pipe)

	Zone 3 Weir	Not Selected			Zone 3 Weir	Not Selected	
Overflow Weir Front Edge Height, Ho =	7.00	N/A	ft (relative to basin bottom at Stage = 0 ft)	Height of Grate Upper Edge, H_t =	7.00	N/A	feet
Overflow Weir Front Edge Length =	8.00	N/A	feet	Overflow Weir Slope Length =	4.00	N/A	feet
Overflow Weir Grate Slope =	0.00	N/A	H:V	Grate Open Area / 100-yr Orifice Area =	8.81	N/A	
Horiz. Length of Weir Sides =	4.00	N/A	feet	Overflow Grate Open Area w/o Debris =	22.27	N/A	ft^2
Overflow Grate Type =	Type C Grate	N/A		Overflow Grate Open Area w/ Debris =	11.14	N/A	ft^2
Debris Clogging % =	50%	N/A	%				

Calculated Parameters for Overflow Weir

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

	Zone 3 Restrictor	Not Selected			Zone 3 Restrictor	Not Selected	
Depth to Invert of Outlet Pipe =	0.25	N/A	ft (distance below basin bottom at Stage = 0 ft)	Outlet Orifice Area =	2.53	N/A	ft^2
Outlet Pipe Diameter =	24.00	N/A	inches	Outlet Orifice Centroid =	0.83	N/A	feet
Restrictor Plate Height Above Pipe Invert =	18.00		inches	Half-Central Angle of Restrictor Plate on Pipe =	2.09	N/A	radians

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage=	9.25	ft (relative to basin bottom at Stage = 0 ft)	Spillway Design Flow Depth=	0.91	feet
Spillway Crest Length =	75.00	feet	Stage at Top of Freeboard =	11.16	feet
Spillway End Slopes =	4.00	H:V	Basin Area at Top of Freeboard =	2.81	acres
Freeboard above Max Water Surface =	1.00	feet	Basin Volume at Top of Freeboard =	15.74	acre-ft

Calculated Parameters for Spillway

Routed Hydrograph Results

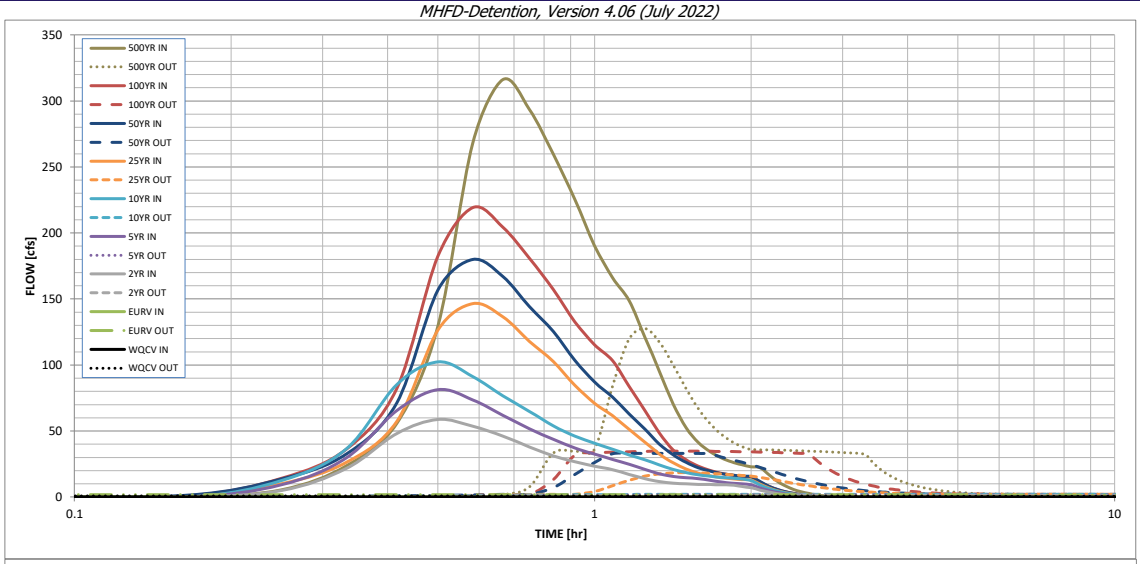
The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

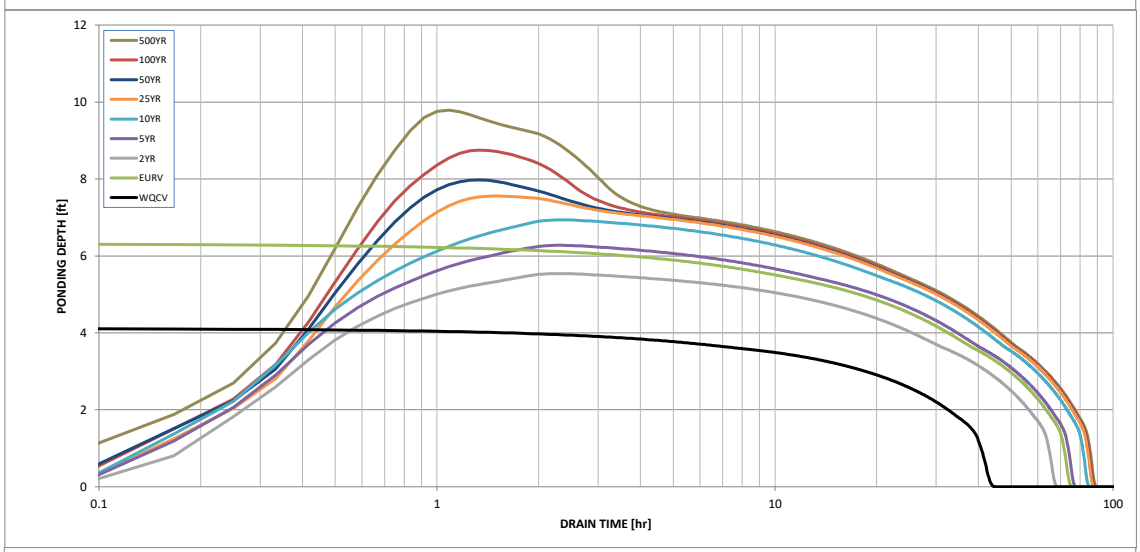
Design Storm Return Period =	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
One-Hour Rainfall Depth (in) =	N/A	N/A	1.03	1.32	1.59	2.01	2.38	2.77	3.84
CUHP Runoff Volume (acre-ft) =	1.367	4.588	3.477	4.802	6.105	8.481	10.431	12.640	18.431
Inflow Hydrograph Volume (acre-ft) =	N/A	N/A	3.477	4.802	6.105	8.481	10.431	12.640	18.431
CUHP Predevelopment Peak Q (cfs) =	N/A	N/A	0.8	9.9	19.6	48.2	66.1	88.2	141.9
OPTIONAL Override Predevelopment Peak Q (cfs) =	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre) =	N/A	N/A	0.01	0.16	0.32	0.80	1.09	1.46	2.34
Peak Inflow Q (cfs) =	N/A	N/A	58.8	81.4	102.3	146.4	179.9	219.2	316.1
Peak Outflow Q (cfs) =	0.8	1.9	1.4	1.9	2.1	18.5	33.1	34.8	127.7
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	0.2	0.1	0.4	0.5	0.4	0.9
Structure Controlling Flow =	Plate	Plate	Plate	Plate	Plate	Overflow Weir 1	Outlet Plate 1	Outlet Plate 1	Spillway
Max Velocity through Grate 1 (fps) =	N/A	N/A	N/A	N/A	N/A	0.7	1.4	1.4	1.5
Max Velocity through Grate 2 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours) =	39	64	59	66	72	71	69	68	63
Time to Drain 99% of Inflow Volume (hours) =	**42**	70	64	72	78	79	78	78	76
Maximum Ponding Depth (ft) =	4.12	6.32	5.54	6.28	6.94	7.56	7.98	8.75	9.79
Area at Maximum Ponding Depth (acres) =	1.00	1.82	1.61	1.81	1.98	2.11	2.17	2.27	2.47
Maximum Volume Stored (acre-ft) =	1.375	4.605	3.267	4.515	5.764	7.037	7.935	9.666	12.097

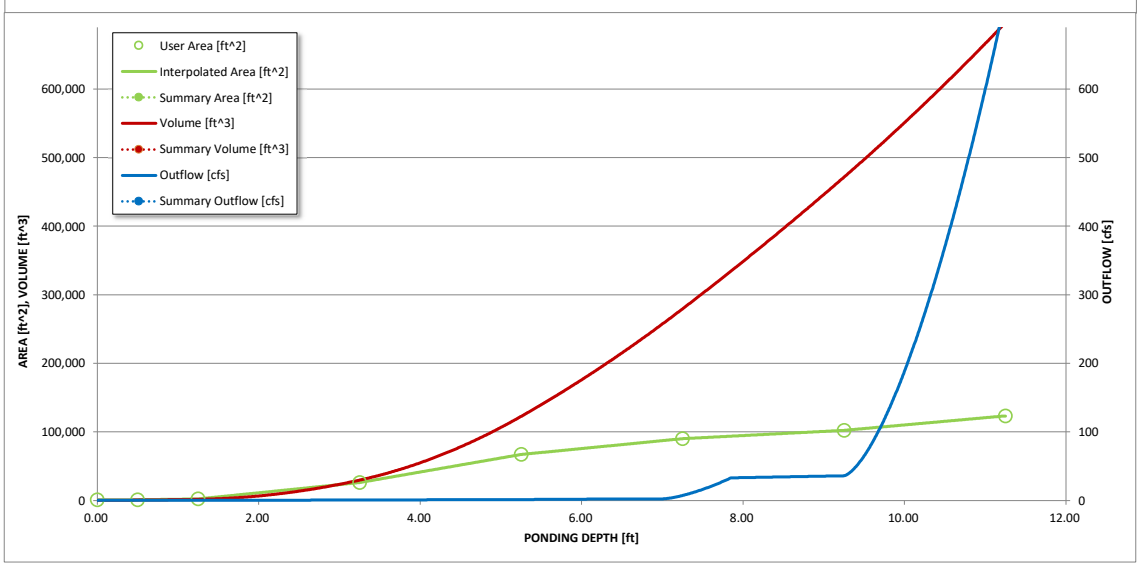
This sheet Included for reference only,

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.06 (July 2022)







S-A-V-D Chart Axis Override	X-axis	Left Y-Axis	Right Y-Axis
minimum bound			
maximum bound			

This sheet Included for reference only,

DETENTION BASIN OUTLET STRUCTURE DESIGN

Outflow Hydrograph Workbook Filename: _____

Inflow Hydrographs

The user can override the calculated inflow hydrographs from this workbook with inflow hydrographs developed in a separate program.

	SOURCE	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP
Time Interval	TIME	WQCV [cfs]	EURV [cfs]	2 Year [cfs]	5 Year [cfs]	10 Year [cfs]	25 Year [cfs]	50 Year [cfs]	100 Year [cfs]	500 Year [cfs]
5.00 min	0:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:10:00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.11	5.53
	0:15:00	0.00	0.00	4.91	9.19	12.38	9.95	13.65	14.19	23.59
	0:20:00	0.00	0.00	21.57	29.61	36.50	26.20	32.46	36.31	55.91
	0:25:00	0.00	0.00	48.09	65.48	85.26	57.22	71.43	82.27	129.31
	0:30:00	0.00	0.00	58.79	81.35	102.26	126.24	156.60	182.34	268.02
	0:35:00	0.00	0.00	53.58	73.61	91.22	146.36	179.87	219.21	316.14
	0:40:00	0.00	0.00	46.12	61.85	76.75	136.51	166.97	204.36	293.64
	0:45:00	0.00	0.00	37.99	51.70	64.87	117.94	144.19	180.82	259.56
	0:50:00	0.00	0.00	31.20	43.62	53.82	102.60	125.35	157.24	225.43
	0:55:00	0.00	0.00	26.62	37.14	46.11	84.61	103.48	132.76	190.68
	1:00:00	0.00	0.00	23.46	32.45	40.84	71.15	87.24	115.42	166.07
	1:05:00	0.00	0.00	20.74	28.50	36.24	61.54	75.61	103.21	148.59
	1:10:00	0.00	0.00	17.15	24.85	31.92	51.10	62.94	83.75	121.05
	1:15:00	0.00	0.00	13.90	20.88	28.22	41.59	51.37	65.58	95.36
	1:20:00	0.00	0.00	11.70	17.55	24.41	32.50	40.10	48.45	70.66
	1:25:00	0.00	0.00	10.55	15.68	20.93	25.93	31.98	35.81	52.50
	1:30:00	0.00	0.00	9.95	14.68	18.51	21.25	26.15	28.12	41.38
	1:35:00	0.00	0.00	9.62	14.01	16.89	18.12	22.20	23.42	34.53
	1:40:00	0.00	0.00	9.42	12.63	15.74	16.07	19.59	20.21	29.83
	1:45:00	0.00	0.00	9.27	11.42	14.95	14.73	17.88	18.06	26.67
	1:50:00	0.00	0.00	9.16	10.58	14.39	13.83	16.72	16.55	24.45
	1:55:00	0.00	0.00	8.04	9.96	13.63	13.21	15.92	15.55	22.96
	2:00:00	0.00	0.00	6.99	9.23	12.34	12.82	15.42	15.04	22.20
	2:05:00	0.00	0.00	5.23	6.93	9.16	9.70	11.64	11.39	16.79
	2:10:00	0.00	0.00	3.68	4.85	6.38	6.75	8.09	7.96	11.72
	2:15:00	0.00	0.00	2.57	3.39	4.48	4.74	5.68	5.63	8.28
	2:20:00	0.00	0.00	1.78	2.32	3.10	3.29	3.94	3.92	5.76
	2:25:00	0.00	0.00	1.19	1.53	2.09	2.22	2.66	2.64	3.88
	2:30:00	0.00	0.00	0.77	1.02	1.40	1.51	1.80	1.79	2.63
	2:35:00	0.00	0.00	0.46	0.65	0.87	0.97	1.15	1.15	1.68
	2:40:00	0.00	0.00	0.24	0.37	0.47	0.55	0.65	0.65	0.94
	2:45:00	0.00	0.00	0.10	0.16	0.20	0.25	0.29	0.29	0.42
	2:50:00	0.00	0.00	0.03	0.04	0.05	0.06	0.07	0.07	0.10
	2:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PROPOSED CONDITIONS DRAINAGE MAP

PIPE ROUTING SUMMARY

Pipe Run	Contributing Basins / Design Point/Pipe Run	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity I(5)	Intensity I(100)	Flow Q(5)	Flow Q(100)	Pipe Size*
1	DP 1 INTERCEPTED	1.07	1.63	16.4	3.39	5.68	3.6	9.2	18" PUBLIC RCP
2	DP 1	1.46	1.98	16.4	3.39	5.68	4.9	11.3	24" PUBLIC RCP

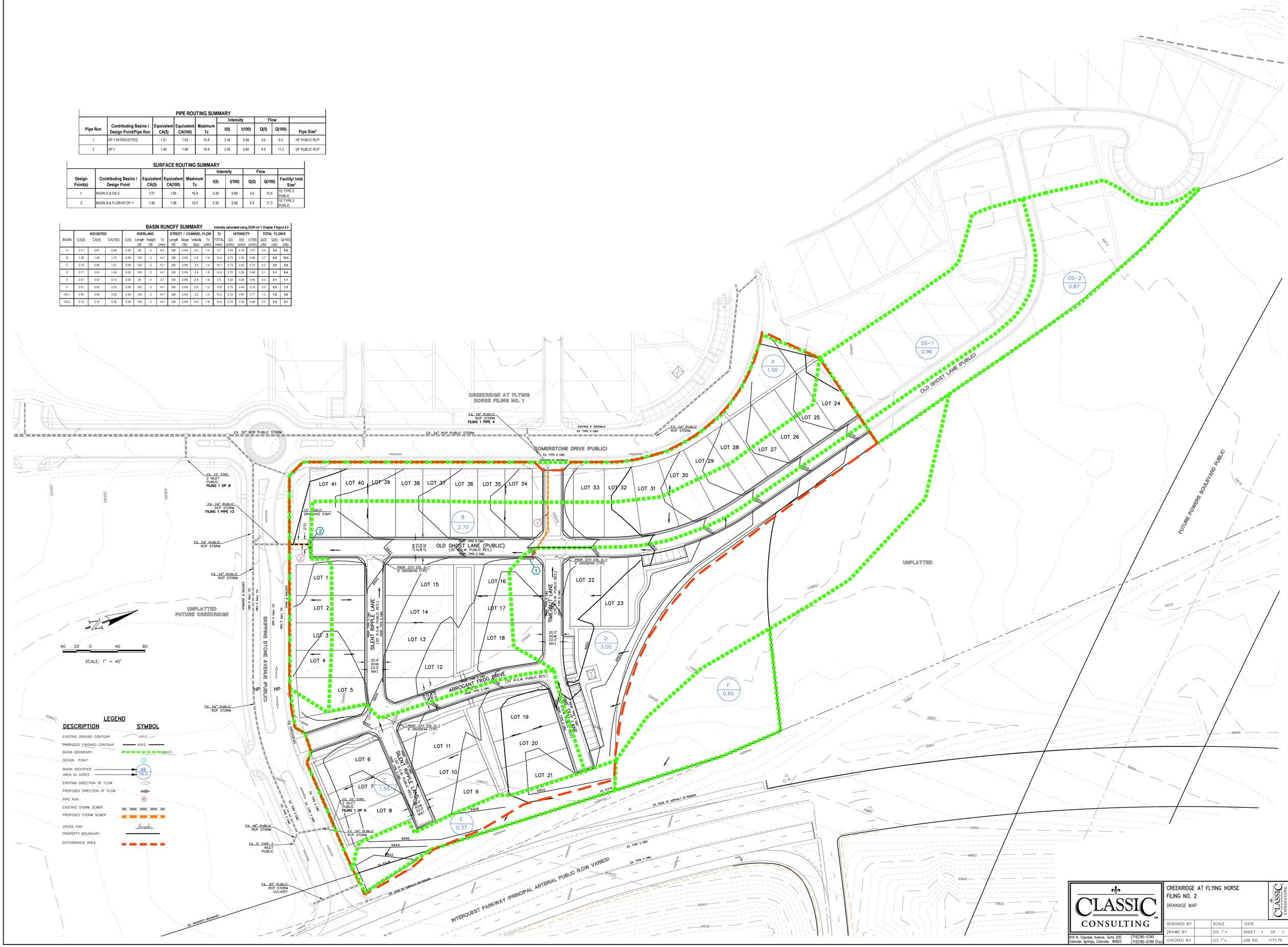
SURFACE ROUTING SUMMARY

Design Point(s)	Contributing Basins / Design Point	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity I(5)	Intensity I(100)	Flow Q(5)	Flow Q(100)	Facility/ Inlet Size*
1	BASIN D & OS-2	1.07	1.85	16.4	3.39	5.68	3.6	10.5	10' TYPE 2 PUBLIC
2	BASIN B & FLOW-BY DP 1	1.46	1.98	16.4	3.39	5.68	4.9	11.3	10' TYPE 2 PUBLIC

BASIN RUNOFF SUMMARY

Intensity calculated using DCM vol 1 Chapter 6 figure 6.5

BASIN	WEIGHTED CA(2)	WEIGHTED CA(5)	WEIGHTED CA(100)	OVERLAND C(5)	OVERLAND Length (ft)	OVERLAND Height (ft)	OVERLAND Tc (min)	STREET / CHANNEL FLOW Length (ft)	STREET / CHANNEL FLOW Slope (%)	STREET / CHANNEL FLOW Velocity (fps)	STREET / CHANNEL FLOW Tc (min)	Tc TOTAL (min)	INTENSITY I(2) (in/hr)	INTENSITY I(5) (in/hr)	INTENSITY I(100) (in/hr)	TOTAL FLOWS Q(2) (cfs)	TOTAL FLOWS Q(5) (cfs)	TOTAL FLOWS Q(100) (cfs)
A	0.77	0.81	0.98	0.08	50	2	8.2	300	3.0%	3.5	1.4	9.7	3.33	4.18	7.01	2.5	**3.4**	**6.8**
B	1.38	1.46	1.76	0.08	100	2	14.7	300	2.0%	2.8	1.8	16.4	2.70	3.39	5.68	3.7	**4.9**	**10.0**
C	0.79	0.84	1.01	0.08	100	2	14.7	300	3.0%	3.5	1.4	16.1	2.73	3.42	5.73	2.2	**2.9**	**5.8**
D	0.77	0.91	1.49	0.08	100	2	14.7	300	2.0%	2.8	1.8	16.4	2.70	3.39	5.68	2.1	**3.1**	**8.4**
E	0.01	0.03	0.13	0.08	25	4	3.7	300	2.0%	2.8	1.8	5.5	4.02	5.04	8.46	0.0	**0.1**	**1.1**
F	0.01	0.05	0.23	0.08	100	2	14.7	200	2.0%	2.8	1.2	15.9	2.75	3.44	5.76	0.0	**0.2**	**1.3**
OS-1	0.49	0.52	0.62	0.08	100	2	14.7	300	2.5%	3.2	1.6	16.2	2.72	3.40	5.71	1.3	**1.8**	**3.6**
OS-2	0.12	0.16	0.36	0.08	100	2	14.7	300	2.0%	2.8	1.8	16.4	2.70	3.39	5.68	0.3	**0.5**	**2.1**



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CREEKRIDGE AT FLYING HORSE
FILING NO. 2
DRAINAGE MAP

DESIGNED BY		SCALE	DATE
DRAWN BY		(H) 1"=	SHEET 1 OF 1
CHECKED BY		(V) 1"=	JOB NO. 1171.79